

LBT-D105/D105CD

SERVICE MANUAL

AEP Model
LBT-D105

UK Model
LBT-D105/D105CD

These systems are composed of following models.
As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR THESE SYSTEM

	LBT-D105		LBT-D105CD UK
	AEP	UK	
DECK RECEIVER	HST-D105		HST-D105CD
TURN TABLE	PS-LX46P		
CD PLAYER	CDP-M12		CDP-M12
SPEAKER SYSTEM	SS-A105	SS-A105E	

PARTS LIST

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
1-501-374-11	ANTENNA, LOOP		* 4-896-384-01	CUSHION (RIGHT) (PS)	
3-701-806-00	ADAPTOR, 45, (E)		* 4-896-385-01	CUSHION (LEFT) (PS)	
3-752-654-11	MANUAL, INSTRUCTION (AEP) (ENGLISH, E, F, P)		1-558-271-11	CORD, CONNECTION (CDP)	
3-752-654-41	MANUAL, INSTRUCTION (AEP) (D, NL, S, I)		* 4-927-355-02	CUSHION (CDP)	
3-752-654-51	MANUAL, INSTRUCTION (UK)		* 4-942-898-31	INDIVIDUAL CARTON (CDP)	
1-465-358-21	REMOTE COMMANDER (RM-S130) (AEP)				
* 4-943-958-01	CUSHION (HST)				
* 4-944-233-01	INDIVIDUAL CARTON (LBT-D105) (AEP)				
* 4-944-234-01	INDIVIDUAL CARTON (LBT-D105CD) (UK)				
* 4-944-235-01	INDIVIDUAL CARTON (LBT-D105) (UK)				

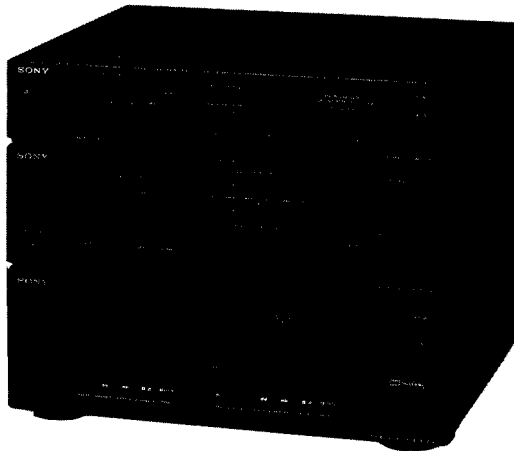
E : SPANISH NL : DUTCH
F : FRENCH S : SWEDISH
P : PORTUGUESE I : ITALIAN
D : GERMAN

COMPACT Hi-Fi STEREO SYSTEM
SONY®

HST-D105

SERVICE MANUAL

AEP Model



- HST-D105 are the STEREO DECK RECEIVER in LBT-D105.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	DECK A TCM-180VW-H2
	DECK B TCM-180VW-H4

- After confirming the form of mechanism, look at a part in the Exploded views.

SPECIFICATIONS

Tuner

System FM stereo
FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 to 108 MHz
Antenna 75 ohms unbalanced
300 ohms balanced

Intermediate frequency 10.7 MHz

MW/LW tuner section

Tuning range MW: 531 to 1,602 kHz
LW: 153 to 279 kHz
Antenna AM loop antenna
External antenna terminal

Intermediate frequency 450 kHz

Amplifier

DIN power output 20 W + 20 W (6 ohms, at 1 kHz)
Continuous RMS power output 23 W + 23 W (6 ohms, at 1 kHz, 5% THD)
Music power output 40 W + 40 W (6 ohms)

Input	Jack type	Sensitivity	Impedance
CD IN	Phono	300 mV	47 kohms

Output	Jack type	Voltage	Impedance
SURROUND SPEAKER	Phono	Accepts speakers of 16 ohms	
HEADPHONES	Stereophone	Accepts headphones of 8 ohms or more	

Frequency response CD: 15 Hz to 50 kHz $\pm 0_{-3}$ dB

Cassette deck

Recording system 4-track 2-channel stereo
Frequency response DOLBY NR OFF
With Type II cassette (Sony UX-S)
40 Hz to 14 kHz (± 3 dB)
With Type I cassette (Sony HF-S)
40 Hz to 13 kHz (± 3 dB)
Wow and flutter $\pm 0.2\%$ (DIN)

General

Power requirements 220 - 230 V AC, 50 Hz
Power consumption 60 W
Weight Approx. 7 kg
Dimensions Approx. 355 × 290 × 320 mm
(w/h/d, including projections)

— continued on next page —



COMPACT HI-FI STEREO SYSTEM
SONY®

Supplied accessories

- Remote commander RM-S130 (1)
- FM wire antenna (1, excluding German model)
- AM loop antenna (1)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directives 87/308/EEC regarding interference suppression.

TABLE OF CONTENTS

Title	Section	Page
SECTION 1. GENERAL		
1-1. Location of Controls		3
SECTION 2. ADJUSTMENTS		
2-1. Mechanical Adjustments		4
2-2. Electrical Adjustments		4
SECTION 3. DIAGRAMS		
3-1. Block Diagram		7
3-2. IC Block Diagrams		9
3-3. Semiconductor Lead Layouts		11
3-4. Circuit Boards Location		11
3-5. Printed Wiring Boards (TC Section)		13
3-6. Schematic Diagram (TC Section)		15
3-7. Schematic Diagram (Main Section)		19
3-8. Printed Wiring Boards (Main Section)		23
SECTION 4. EXPLODED VIEWS		
4-1. Cabinet Section		27
4-2. Front Panel Section		28
4-3. Mechanism Deck Section (1)		29
4-4. Mechanism Deck Section (2)		30
4-5. Mechanism Deck Section (3)		31
SECTION 5. ELECTRICAL PARTS LIST		
		32

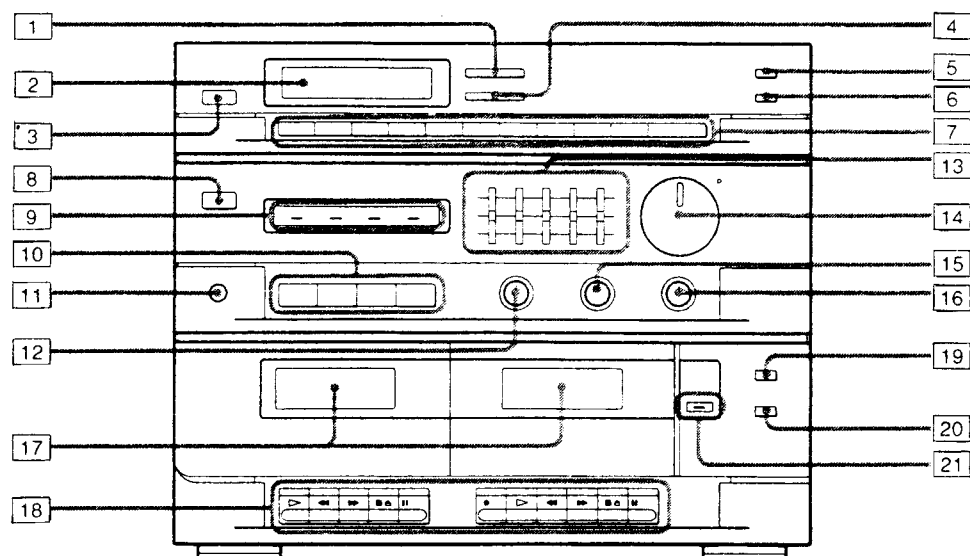
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

This section is extracted from instruction manual.

1-1. LOCATION OF CONTROLS



Refer to the pages indicated in ● for details.

Tuner

- 1 BAND SELECTOR ●
- 2 Display window
- 3 Remote sensor
- 4 DUAL MODE TUNING buttons ●
- 5 MEMORY button ●
- 6 ST/MUTE button ●
- 7 Buttons for storing station frequencies ●

Amplifier

- 8 POWER switch ●
- 9 Function indicators
- 10 Function selectors
- 11 HEADPHONES jack
- 12 SURROUND control ●
- 13 GRAPHIC EQUALIZER controls ●
- 14 VOLUME control ●
- 15 DBFB (dynamic bass feedback) control ●
- 16 BALANCE control ●

Cassette deck

- 17 Cassette holders
- 18 Tape operation buttons ●
 - ◀◀ Leftward fast winding
 - ▶▶ Rightward fast winding
 - ▶ Forward play
 - ▲ Stop/eject
 - || PAUSE Pause
 - REC Record
- 19 TAPE SELECTOR ●
- 20 DOLBY NR (noise reduction) switch ●
- 21 OPERATING INDICATOR

SECTION 2 ADJUSTMENTS • Refer to page 6 for Adjustment Location.

2-1. MECHANICAL ADJUSTMENTS PRECAUTIONS

- Clean the following parts with a denatured alcohol-moistened swab:

record/playback heads	pinch rollers
erase heads	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	30—70g·cm (0.42—0.97oz·inch)
FWD Back tension	CQ-102C	1.5—5.5g·cm (0.020—0.076oz·inch)
FF. REW	CQ-201B	63g·cm or more (0.87oz·inch)

2-2. ELECTRICAL ADJUSTMENTS PRECAUTIONS

0dB = 0.775V (AF)
0dB = 0.1μV (RF)

CASSETTE DECK SECTION

- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
- The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch: OFF
TAPE SELECT switch: TYPE I

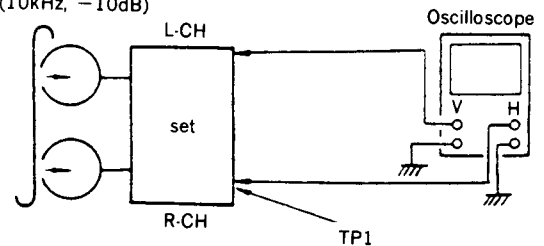
Type	Signal	Used for
P-4-A100	6.3kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

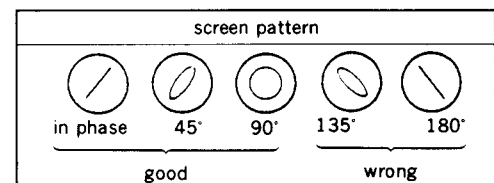
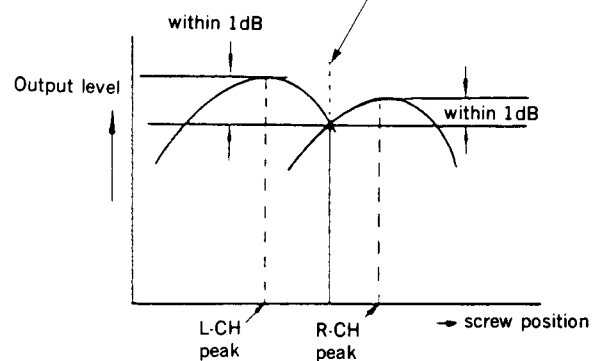
Note: Perform this adjustments for both decks.

Procedure:

- Mode: FWD playback
test tape
P-4-A100
(10kHz, -10dB)

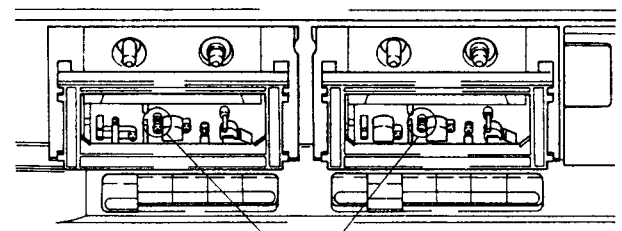


- Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.



- After the adjustments, apply suitable locking compound to the parts adjusted.

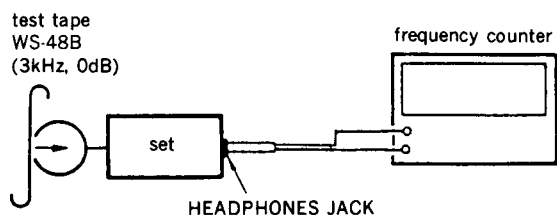
Adjustment Location:



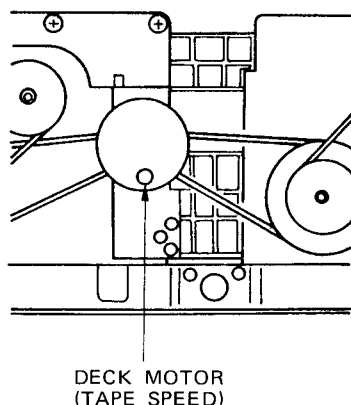
Adjustment screw
REC/PB head (deck B)
or PB head (deck A)

Tape Speed Adjustment**Procedure :**

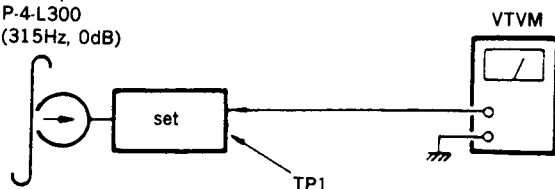
Mode : playback



1. Playback WS-48B (Tape center portion) in FWD mode.
2. Adjustment the deck A, deck B so that at this time the frequency counter reads $3000 \pm 30\text{Hz}$.
Frequency difference between the beginning and the end of the tape should be within 1.5%.

Adjustment Location : DECK MOTOR (BOTTOM SIDE)**Playback Level Adjustment****Procedure :**

Mode : FWD playback

test tape
P-4-L300
(315Hz, 0dB)

DECK-A side RV400(L-CH), RV500(R-CH)

DECK-B side RV401(L-CH), RV501(R-CH)

so that the limits below are satisfied.

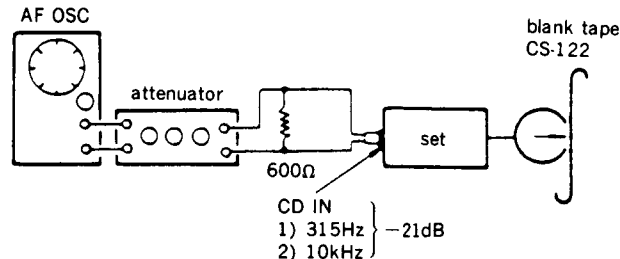
Adjustable limits :CN405 level: -1.7dB to -3.7dB

level difference between the channels: within 1.0dB

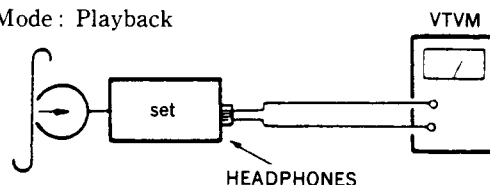
(See page 6 for Adjustment Location)

Record BIAS Current Adjustment**Procedure :**

1. Mode : record



2. Mode : Playback



- (1) Supply a -21dB signal (315Hz) from the CD IN. Adjust the VOLUME control so that a -30dB signal is output to the headphones terminal.
- (2) Insert alignment tape CS-122 into deck B and put the set into the REC mode.
- (3) Adjust the signal frequency to 10kHz.
- (4) Put the set into the PB mode and adjust RV403 (L CH) and RV503 (R CH) in the REC mode so that the level difference between 315Hz and 10kHz is within $0 \pm 0.5\text{dB}$.
- (5) Repeatedly put the set into the REC and PB modes two to four times and adjust the bias.

Adjustable limits :The HEADPHONES level of 10kHz signal relative to that of 315Hz : $0\text{dB} \pm 0.5\text{dB}$

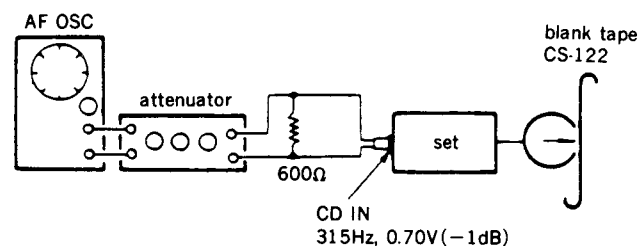
(See page 6 for Adjustment Location)

Record Level Adjustment**Setting :**

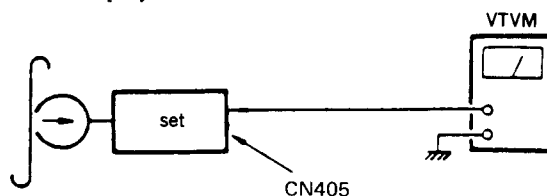
TAPE SELECT : TYPE I

Procedure :

1. Mode : record



2. Mode : playback



- (1) Supply a -22.7dB signal (315Hz) from the CD terminal.
- (2) Insert alignment tape CS-122 into deck B and record the signal. Then playback the recorded portion of the tape and adjust RV402 (L-CH) and RV502 (R-CH) so that the -25.0dB signal output is obtained at TP1 terminal.

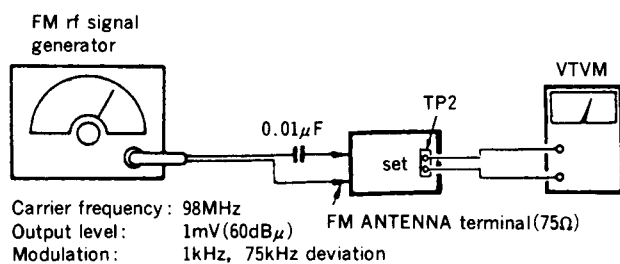
Adjustable limits :

HEADPHONES level : $-25.0\text{dB} + 0.5\text{dB}$

TUNER SECTION

As FM FRONT-END FE301 is difficult to repair if faulty, replace it with new one.

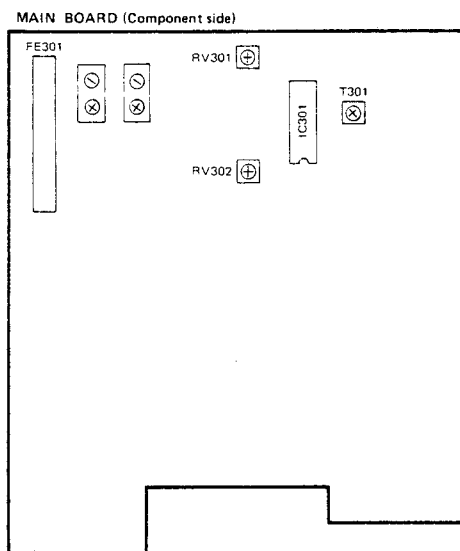
FM NULL Adjustment



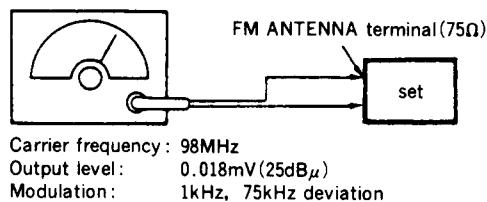
Procedure :

1. Tune the set to 98 MHz.
2. Adjust T301 for 0V reading on the VTVM.

Adjustment Location :



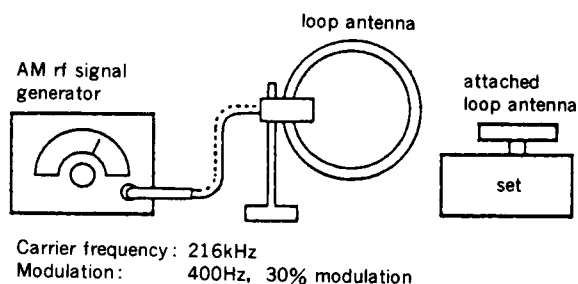
FM Tuned Level Adjustment



Procedure :

1. Tune the set to 98 MHz.
2. Adjust RV302 to the point where "TUNED" sign on FL601 just turns light.

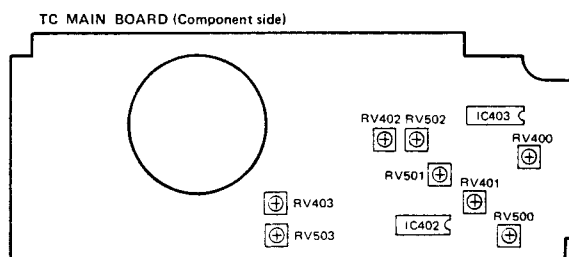
• AM SECTION



AM Tuned Level Adjustment

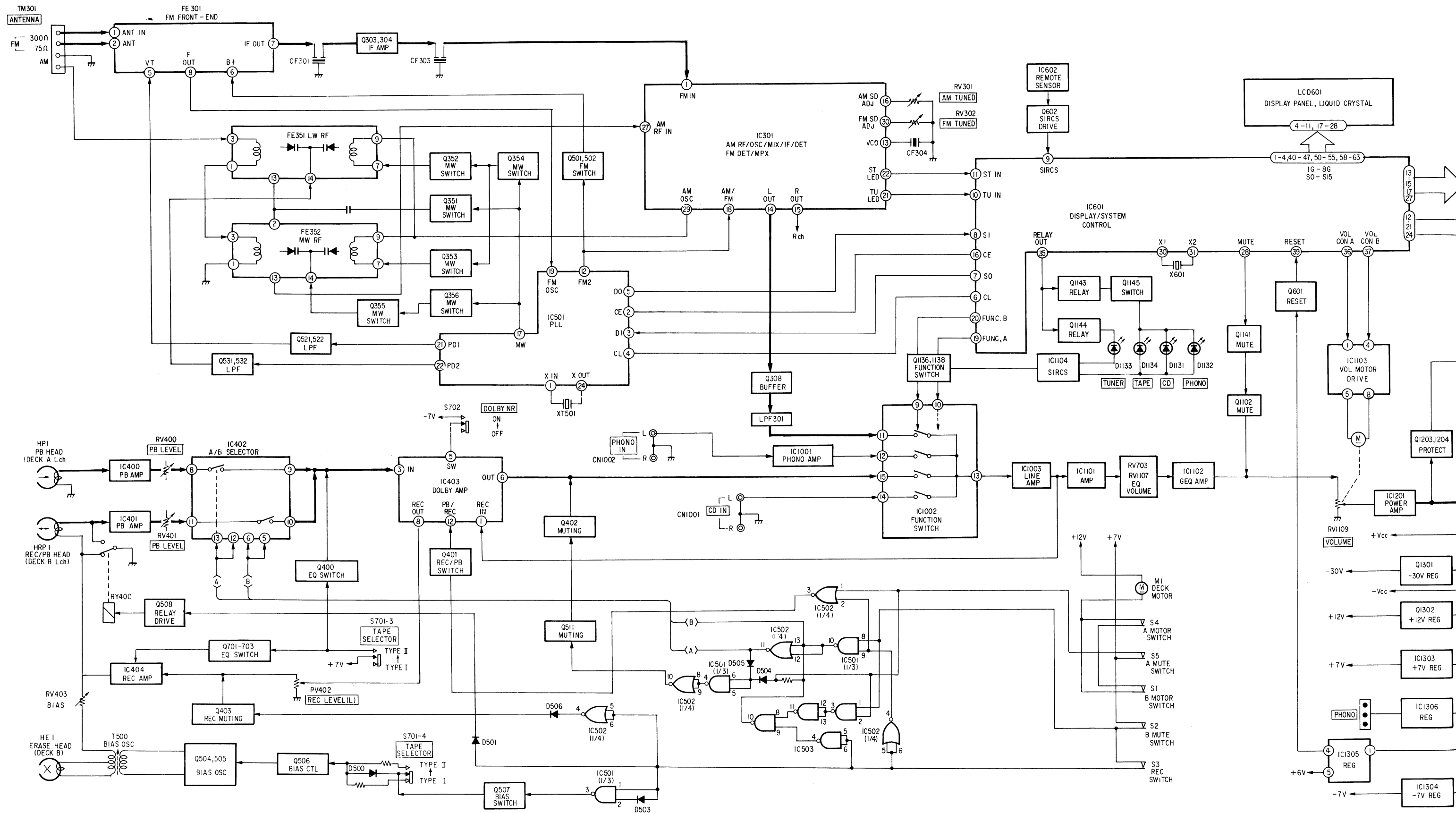
• LW BAND

1. Set loop antenna input level to 2.5 mV (50 dBμ/m) and no signal tuned light should not on.
2. Tune the set to 216 kHz.
3. Adjust RV301 to the point where "TUNED" sign on FL601 just turns light.



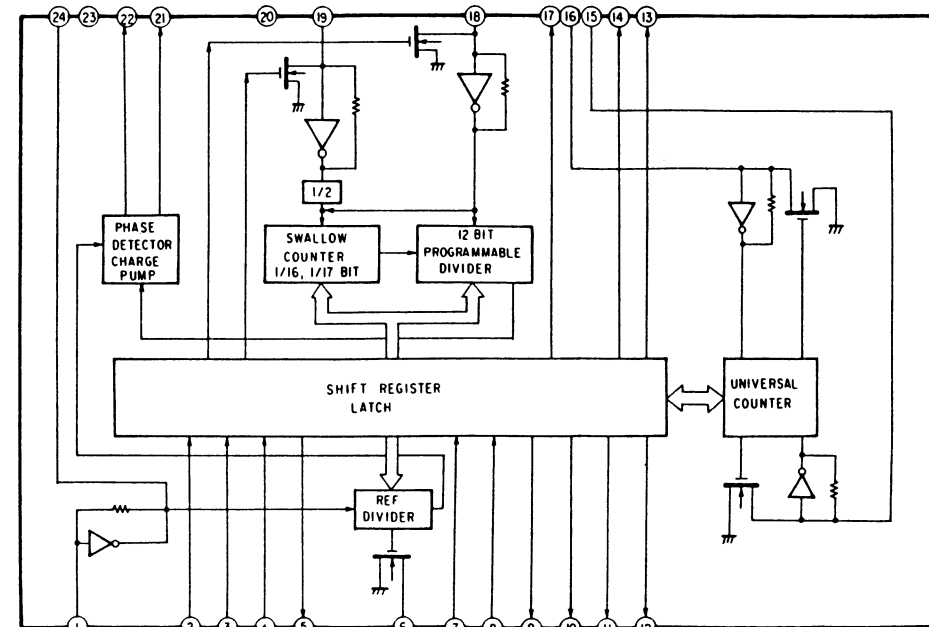
SECTION 3 DIAGRAMS

3-1. BLOCK DIAGRAM

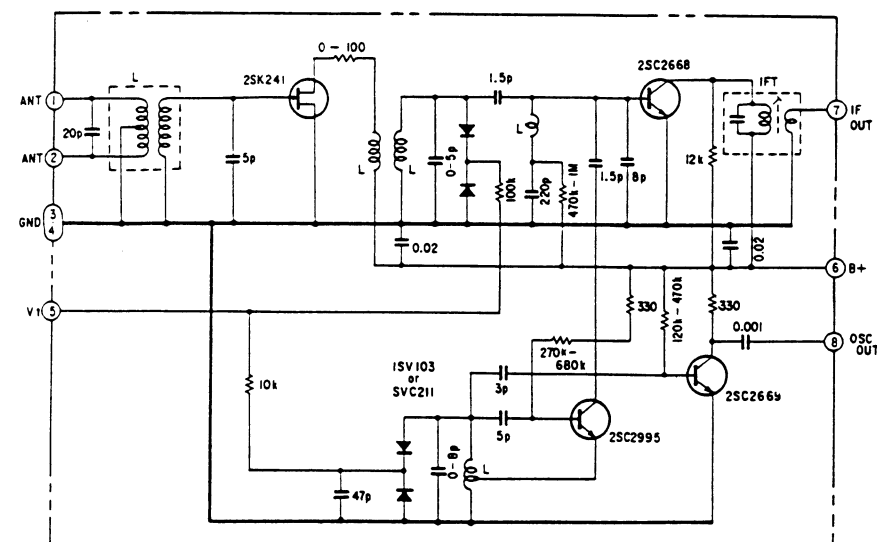


3-2. IC BLOCK DIAGRAMS

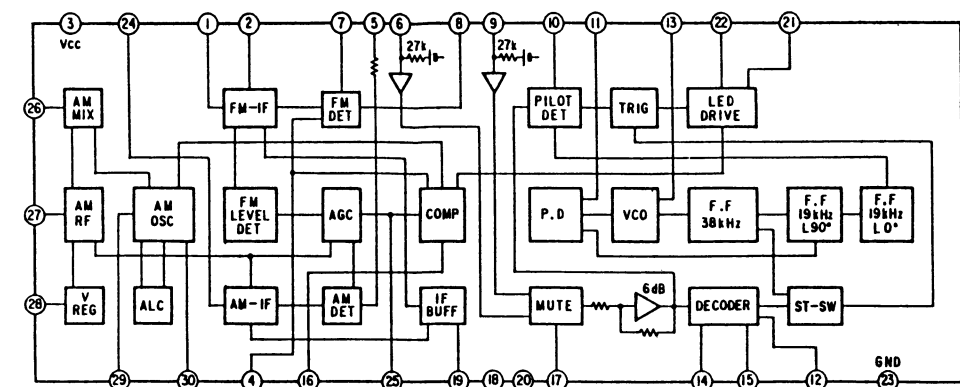
- IC501 LC7218



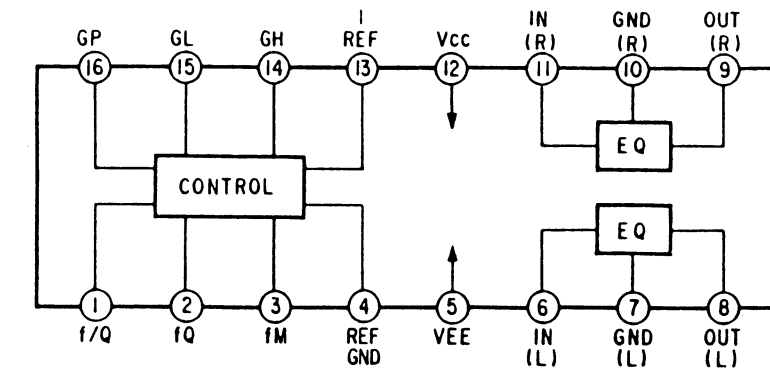
- FM FRONT-END (FE 301)



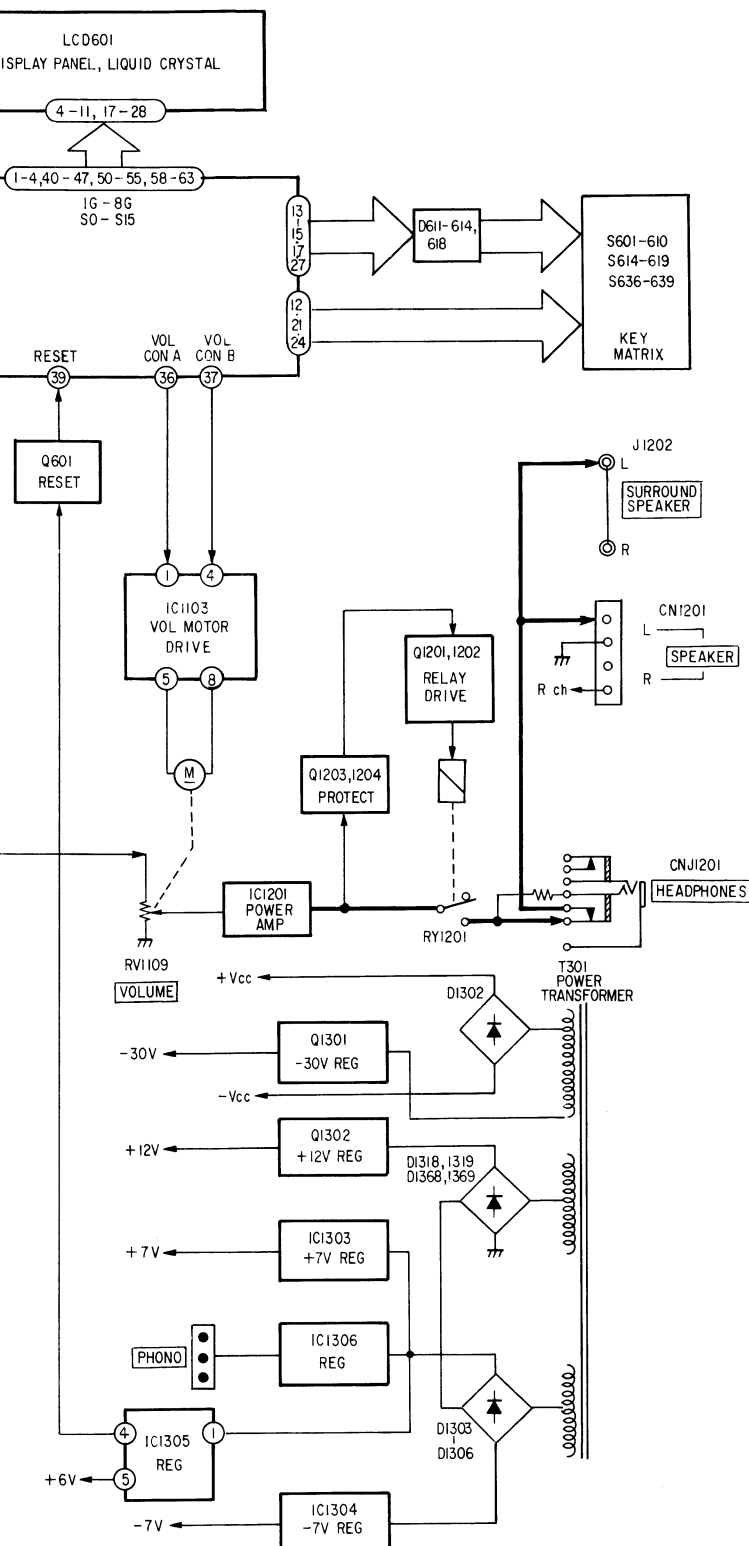
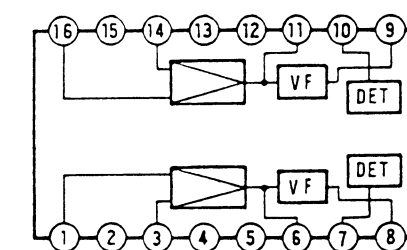
- IC301 LA1851N



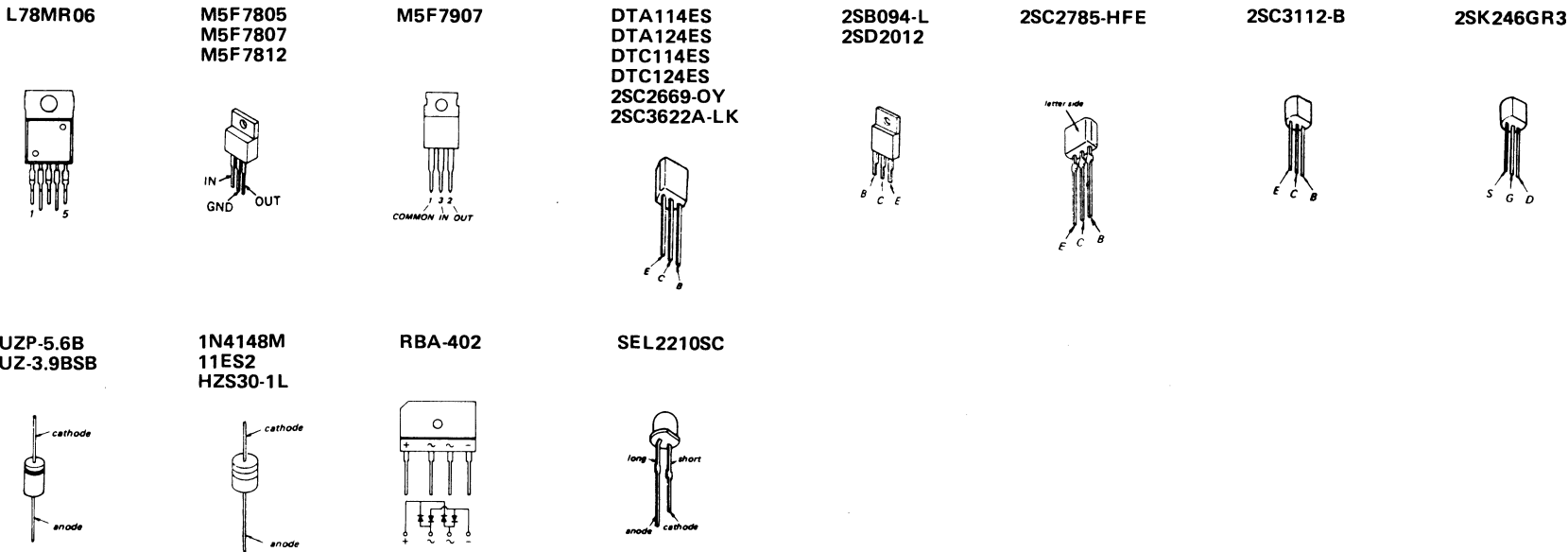
- IC404 CXA1198AP



- IC403 CXA1100P



3-3. SEMICONDUCTOR LEAD LAYOUTS



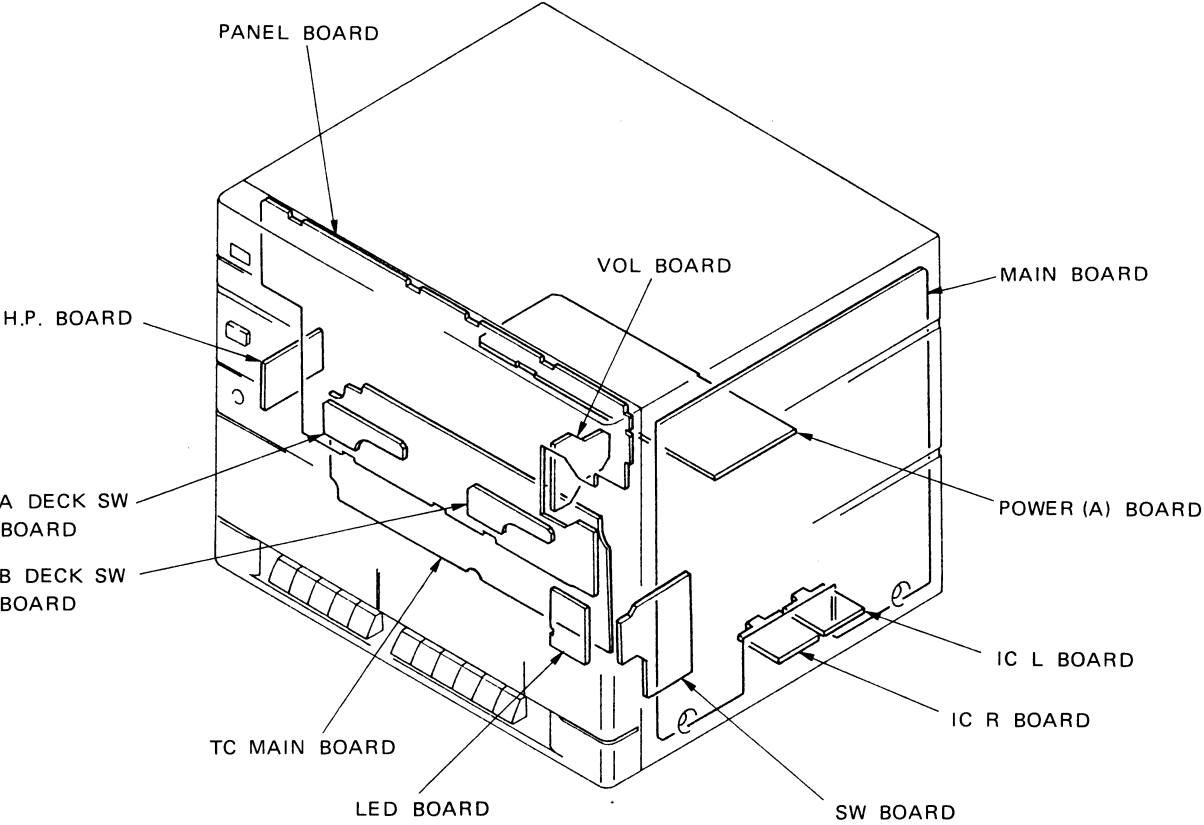
UZP-5.6B
UZ-3.9BSB

1N4148M
11ES2
HZS30-1L

RBA-402

SEL2210SC

3-4. CIRCUIT BOARDS LOCATION



● Semiconductor Location

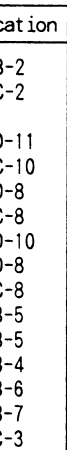
Ref. No.	Location	Ref. No.	Location
D500	C-6	IC515	B-2
D501	C-7	IC516	C-2
D502	B-7		
D503	D-4	Q400	D-11
D504	C-3	Q401	C-10
D505	C-2	Q402	D-8
D506	C-3	Q403	C-8
D507	B-3	Q500	D-10
		Q502	D-8
IC400	B-11	Q503	C-8
IC401	B-8	Q504	B-5
IC402	B-9	Q505	B-5
IC403	D-10	Q506	B-4
IC404	C-7	Q507	B-6
IC501	D-3	Q508	B-7
IC502	C-3	Q511	C-3
IC503	B-3		

- — : parts extracted from the component side.
- : Through hole.
- ▨ : Pattern on the side which is seen.
- ▤ : Pattern of the rear side.
- : Resistor components printed on the rear side.

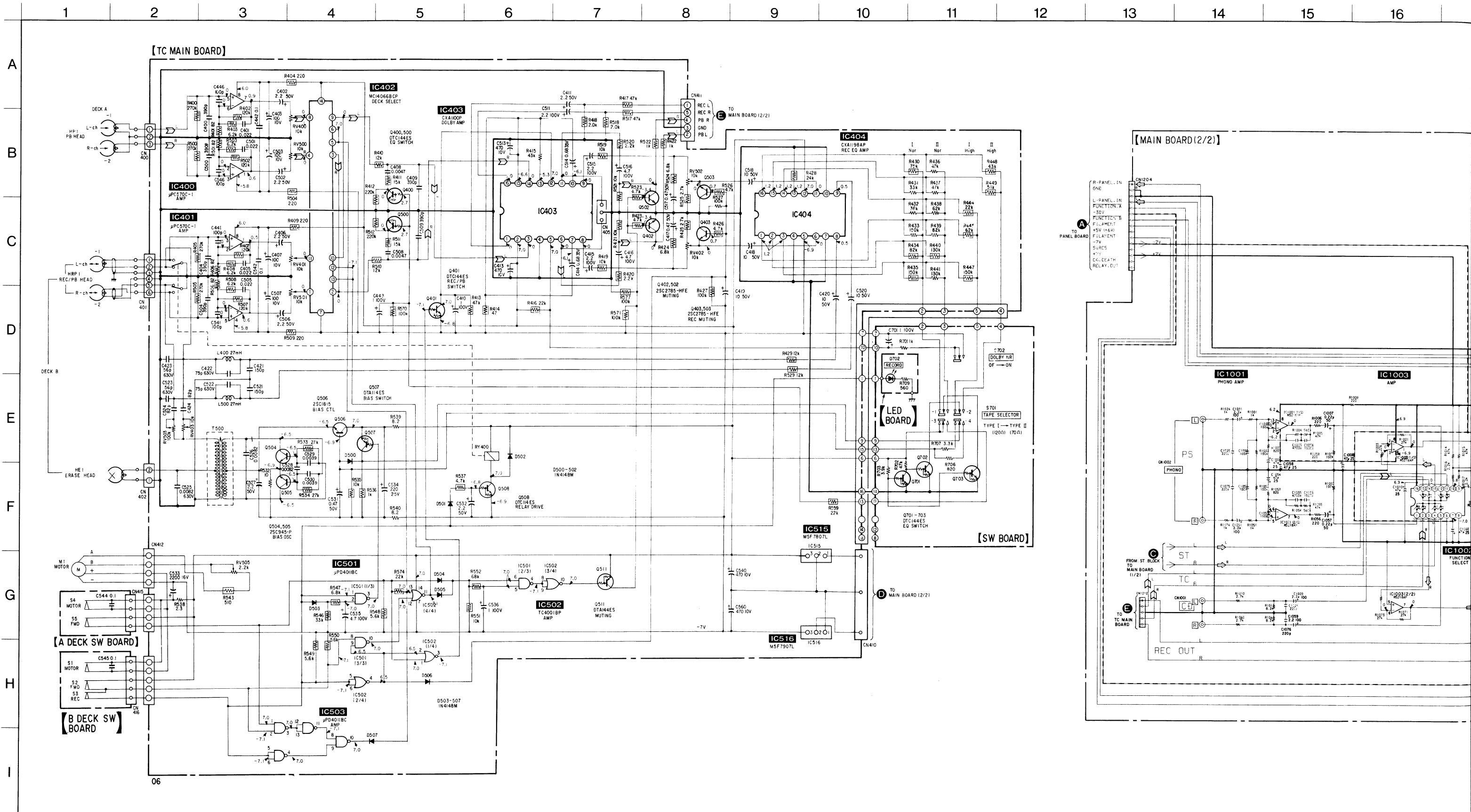
3-5. PRINTED

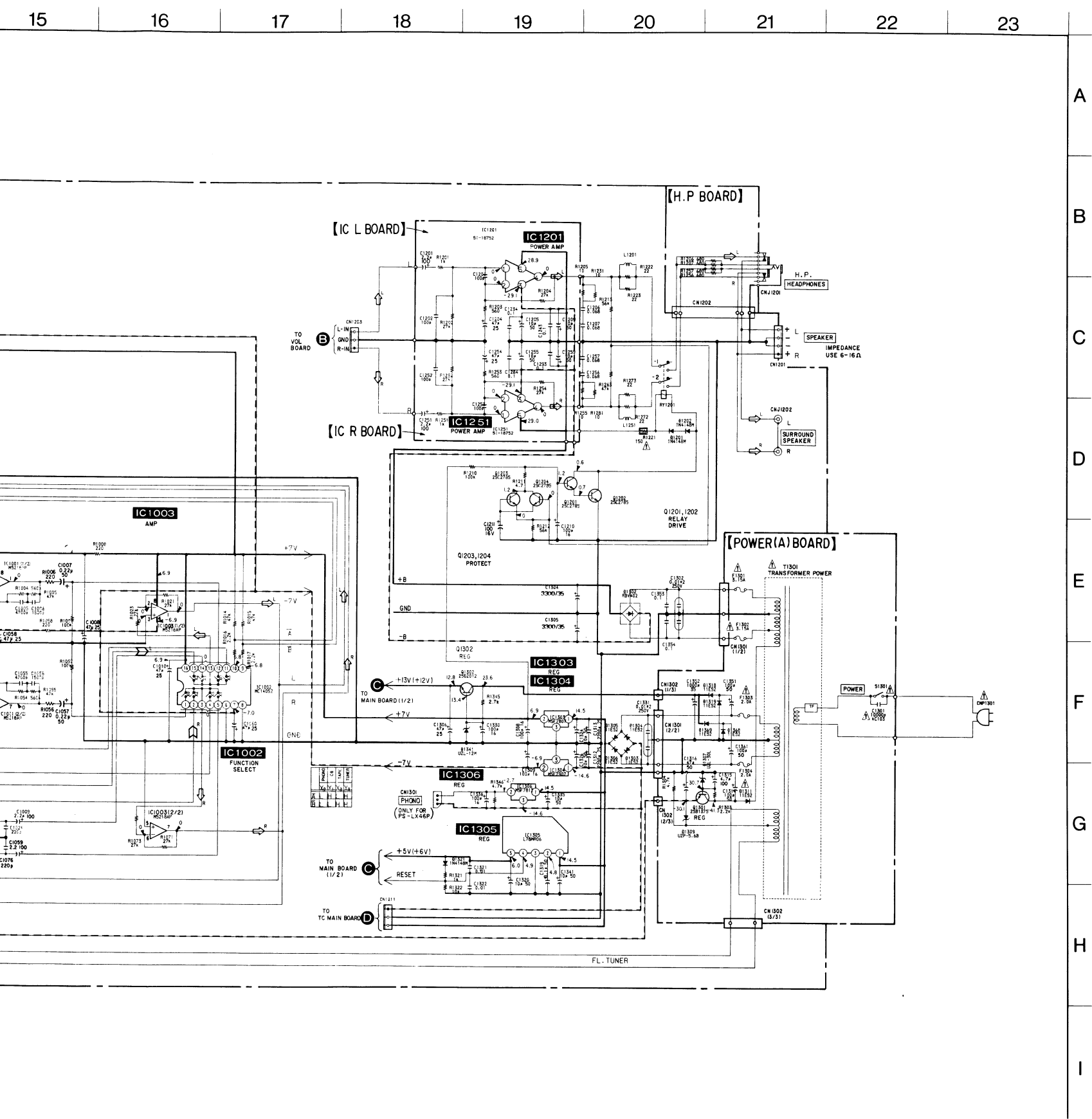
A		TO SW BOARD
B		TO MAIN BOARD
C		
D		
E		
F		
G		

Location
B-2
C-2
D-11
C-10
D-8
C-8
D-10
D-8
C-8
B-5
B-5
B-4
B-6
B-7
C-3



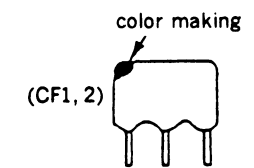
3-6. SCHEMATIC DIAGRAM -TC SECTION-





Note on Ceramic Filter (C1, 2) Replacement.

This set employs two ceramic filters (CF1, 2) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by jumpers (* A, * B) is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



○ : Connected
× : not Connected

Ceramic filter		Mount		FM intermediate frequency
Color mark	Center frequency (MHz)	IF-50K * B	IF+50K * A	frequency (MHz)
white	10.750	×	○	10.750
Red	10.700	×	×	10.700
Black	10.650	○	×	10.650

FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency, i. e. of same color coding, should be used for CF1 and CF2.

When replacing the ceramic filters, perform the FM Di-scriminator Adjustment.

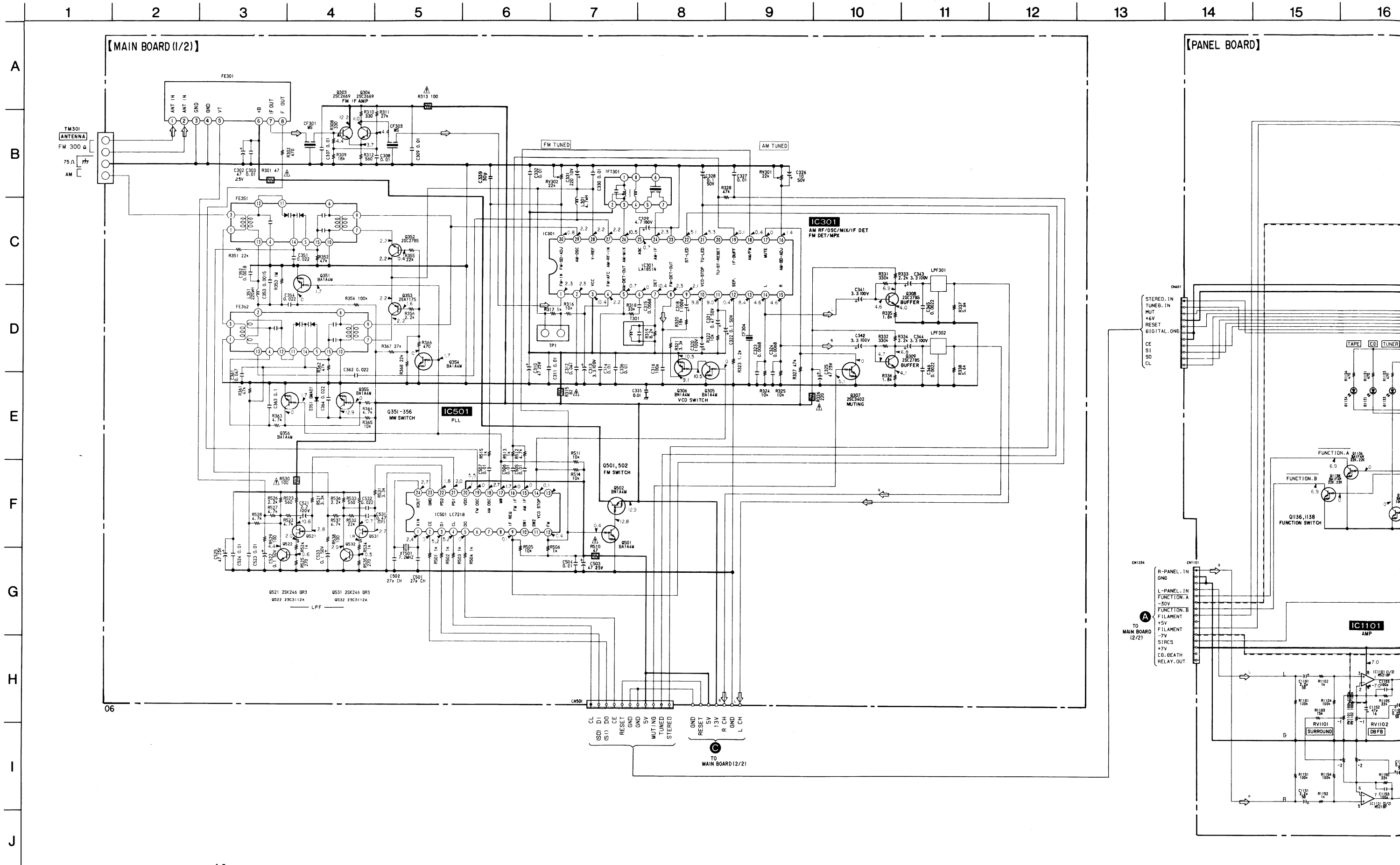
Note:

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- $\triangle$: internal component.
- : nonflammable resistor.
- : fusible resistor.

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

- : B+ Line
- : B- Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- Voltages are taken with a VOM (Input Impedance $10M\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
 : FM : PB (DECK A)

3-7. SCHEMATIC DIAGRAM –MAIN SECTION– • See page 18 for note.





B

C

D

E

F

G

H

1

J

3-8. PRINTED WIRING BOARDS
-MAIN SECTION-

POWER (A) BOARD

MAIN BOARD

IC R BOARD

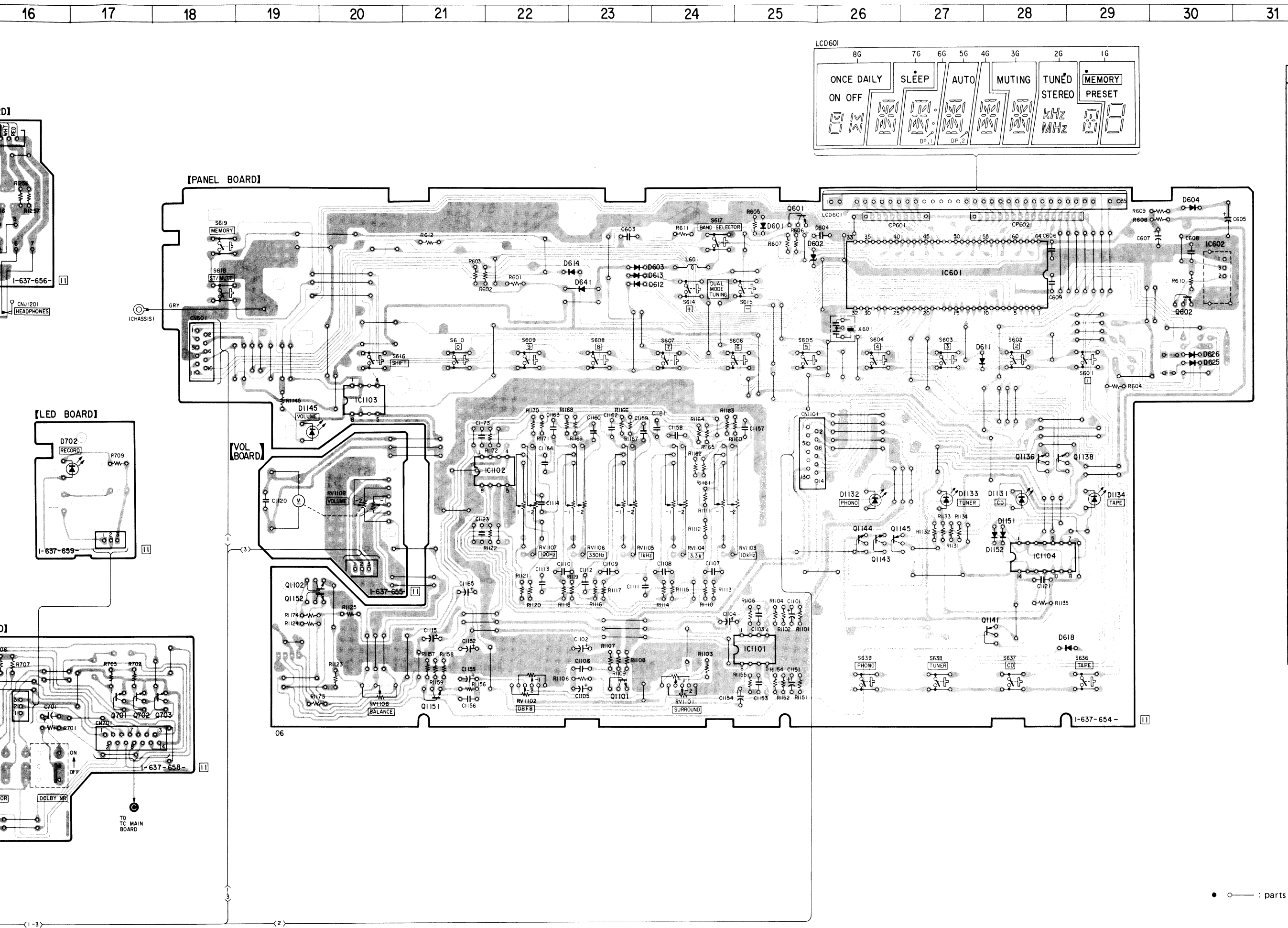
IC L BOARD

H.P. BOARD

LED BOARD

SW BOARD

Diagram showing the main section of the printed wiring boards for a stereo system, including the Power (A) Board, Main Board, IC R Board, IC L Board, H.P. Board, LED Board, and SW Board. The diagram includes component labels (resistors, capacitors, diodes, transistors, integrated circuits, and connectors) and their connections. A color-coded legend is provided for the Power (A) Board: BRN (Brown), BLK (Black), YEL (Yellow), BLU (Blue), WHT (White), and RED (Red). The diagram also shows the connection points for the AC power input, antenna, and various speakers and headphones. The SW Board includes a TAPE SELECTOR and a DOLBY NR (Noise Reduction) switch. The H.P. Board is for headphones. The LED Board is for the LED display. The IC R and IC L boards are for the right and left channels of the stereo system. The Main Board is the central processing unit. The Power (A) Board is the power supply section. The diagram is labeled with various component values and part numbers, such as 1-637-657, 1-637-658, 1-637-659, 1-637-660, 1-637-661, 1-637-662, 1-637-663, 1-637-664, 1-637-665, 1-637-666, 1-637-667, 1-637-668, 1-637-669, 1-637-670, 1-637-671, 1-637-672, 1-637-673, 1-637-674, 1-637-675, 1-637-676, 1-637-677, 1-637-678, 1-637-679, 1-637-680, 1-637-681, 1-637-682, 1-637-683, 1-637-684, 1-637-685, 1-637-686, 1-637-687, 1-637-688, 1-637-689, 1-637-690, 1-637-691, 1-637-692, 1-637-693, 1-637-694, 1-637-695, 1-637-696, 1-637-697, 1-637-698, 1-637-699, 1-637-700, 1-637-701, 1-637-702, 1-637-703, 1-637-704, 1-637-705, 1-637-706, 1-637-707, 1-637-708, 1-637-709, 1-637-710, 1-637-711, 1-637-712, 1-637-713, 1-637-714, 1-637-715, 1-637-716, 1-637-717, 1-637-718, 1-637-719, 1-637-720, 1-637-721, 1-637-722, 1-637-723, 1-637-724, 1-637-725, 1-637-726, 1-637-727, 1-637-728, 1-637-729, 1-637-730, 1-637-731, 1-637-732, 1-637-733, 1-637-734, 1-637-735, 1-637-736, 1-637-737, 1-637-738, 1-637-739, 1-637-740, 1-637-741, 1-637-742, 1-637-743, 1-637-744, 1-637-745, 1-637-746, 1-637-747, 1-637-748, 1-637-749, 1-637-750, 1-637-751, 1-637-752, 1-637-753, 1-637-754, 1-637-755, 1-637-756, 1-637-757, 1-637-758, 1-637-759, 1-637-760, 1-637-761, 1-637-762, 1-637-763, 1-637-764, 1-637-765, 1-637-766, 1-637-767, 1-637-768, 1-637-769, 1-637-770, 1-637-771, 1-637-772, 1-637-773, 1-637-774, 1-637-775, 1-637-776, 1-637-777, 1-637-778, 1-637-779, 1-637-780, 1-637-781, 1-637-782, 1-637-783, 1-637-784, 1-637-785, 1-637-786, 1-637-787, 1-637-788, 1-637-789, 1-637-790, 1-637-791, 1-637-792, 1-637-793, 1-637-794, 1-637-795, 1-637-796, 1-637-797, 1-637-798, 1-637-799, 1-637-800, 1-637-801, 1-637-802, 1-637-803, 1-637-804, 1-637-805, 1-637-806, 1-637-807, 1-637-808, 1-637-809, 1-637-810, 1-637-811, 1-637-812, 1-637-813, 1-637-814, 1-637-815, 1-637-816, 1-637-817, 1-637-818, 1-637-819, 1-637-820, 1-637-821, 1-637-822, 1-637-823, 1-637-824, 1-637-825, 1-637-826, 1-637-827, 1-637-828, 1-637-829, 1-637-830, 1-637-831, 1-637-832, 1-637-833, 1-637-834, 1-637-835, 1-637-836, 1-637-837, 1-637-838, 1-637-839, 1-637-840, 1-637-841, 1-637-842, 1-637-843, 1-637-844, 1-637-845, 1-637-846, 1-637-847, 1-637-848, 1-637-849, 1-637-850, 1-637-851, 1-637-852, 1-637-853, 1-637-854, 1-637-855, 1-637-856, 1-637-857, 1-637-858, 1-637-859, 1-637-860, 1-637-861, 1-637-862, 1-637-863, 1-637-864, 1-637-865, 1-637-866, 1-637-867, 1-637-868, 1-637-869, 1-637-870, 1-637-871, 1-637-872, 1-637-873, 1-637-874, 1-637-875, 1-637-876, 1-637-877, 1-637-878, 1-637-879, 1-637-880, 1-637-881, 1-637-882, 1-637-883, 1-637-884, 1-637-885, 1-637-886, 1-637-887, 1-637-888, 1-637-889, 1-637-890, 1-637-891, 1-637-892, 1-637-893, 1-637-894, 1-637-895, 1-637-896, 1-637-897, 1-637-898, 1-637-899, 1-637-900, 1-637-901, 1-637-902, 1-637-903, 1-637-904, 1-637-905, 1-637-906, 1-637-907, 1-637-908, 1-637-909, 1-637-910, 1-637-911, 1-637-912, 1-637-913, 1-637-914, 1-637-915, 1-637-916, 1-637-917, 1-637-918, 1-637-919, 1-637-920, 1-637-921, 1-637-922, 1-637-923, 1-637-924, 1-637-925, 1-637-926, 1-637-927, 1-637-928, 1-637-929, 1-637-930, 1-637-931, 1-637-932, 1-637-933, 1-637-934, 1-637-935, 1-637-936, 1-637-937, 1-637-938, 1-637-939, 1-637-940, 1-637-941, 1-637-942, 1-637-943, 1-637-944, 1-637-945, 1-637-946, 1-637-947, 1-637-948, 1-637-949, 1-637-950, 1-637-951, 1-637-952, 1-637-953, 1-637-954, 1-637-955, 1-637-956, 1-637-957, 1-637-958, 1-637-959, 1-637-960, 1-637-961, 1-637-962, 1-637-963, 1-637-964, 1-637-965, 1-637-966, 1-637-967, 1-637-968, 1-637-969, 1-637-970, 1-637-971, 1-637-972, 1-637-973, 1-637-974, 1-637-975, 1-637-976, 1-637-977, 1-637-978, 1-637-979, 1-637-980, 1-637-981, 1-637-982, 1-637-983, 1-637-984, 1-637-985, 1-637-986, 1-637-987, 1-637-988, 1-637-989, 1-637-990, 1-637-991, 1-637-992, 1-637-993, 1-637-994, 1-637-995, 1-



● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D351	E-5	IC1104	G-28
D601	C-25	IC1201	G-13
D602	C-25	IC1251	E-13
D603	C-23	IC1303	H-12
D604	C-30	IC1304	F-10
D611	E-28	IC1305	F-11
D612	D-23	IC1306	C-10
D613	D-23		
D614	D-23	Q303	E-6
D618	H-29	Q304	E-6
D625	E-30	Q305	I-7
D626	E-30	Q306	I-6
D641	D-23	Q307	H-8
D702	F-17	Q308	H-7
D1131	F-28	Q309	H-8
D1132	F-26	Q351	D-5
D1133	F-27	Q352	D-6
D1134	F-29	Q353	D-6
D1145	E-19	Q354	E-6
D1151	G-28	Q355	E-5
D1152	G-28	Q501	F-5
D1201	C-13	Q502	F-5
D1202	C-13	Q521	C-8
D1302	C-12	Q522	B-8
D1303	B-11	Q531	C-8
D1304	B-11	Q532	C-8
D1305	C-11	Q601	C-25
D1306	C-11	Q602	D-30
D1307	B-4	Q701	I-17
D1309	B-2	Q702	I-17
D1311	B-3	Q703	I-18
D1318	D-2	Q1101	I-23
D1319	D-2	Q1102	G-19
D1321	G-12	Q1136	F-28
D1341	H-11	Q1138	F-29
D1368	C-2	Q1141	H-28
D1369	C-2	Q1143	G-26
		Q1144	G-26
		Q1145	G-27
IC301	G-6	Q1151	I-21
IC501	E-8	Q1152	G-19
IC601	D-27	Q1201	C-13
IC602	C-30	Q1202	C-13
IC1001	C-9	Q1203	D-13
IC1002	G-9	Q1204	D-13
IC1003	J-8	Q1301	B-2
IC1101	H-25	Q1302	I-11
IC1102	F-22		
IC1103	E-20		

● ○ — : parts extracted from the component side.

SECTION 4
EXPLODED VIEWS

NOTE:

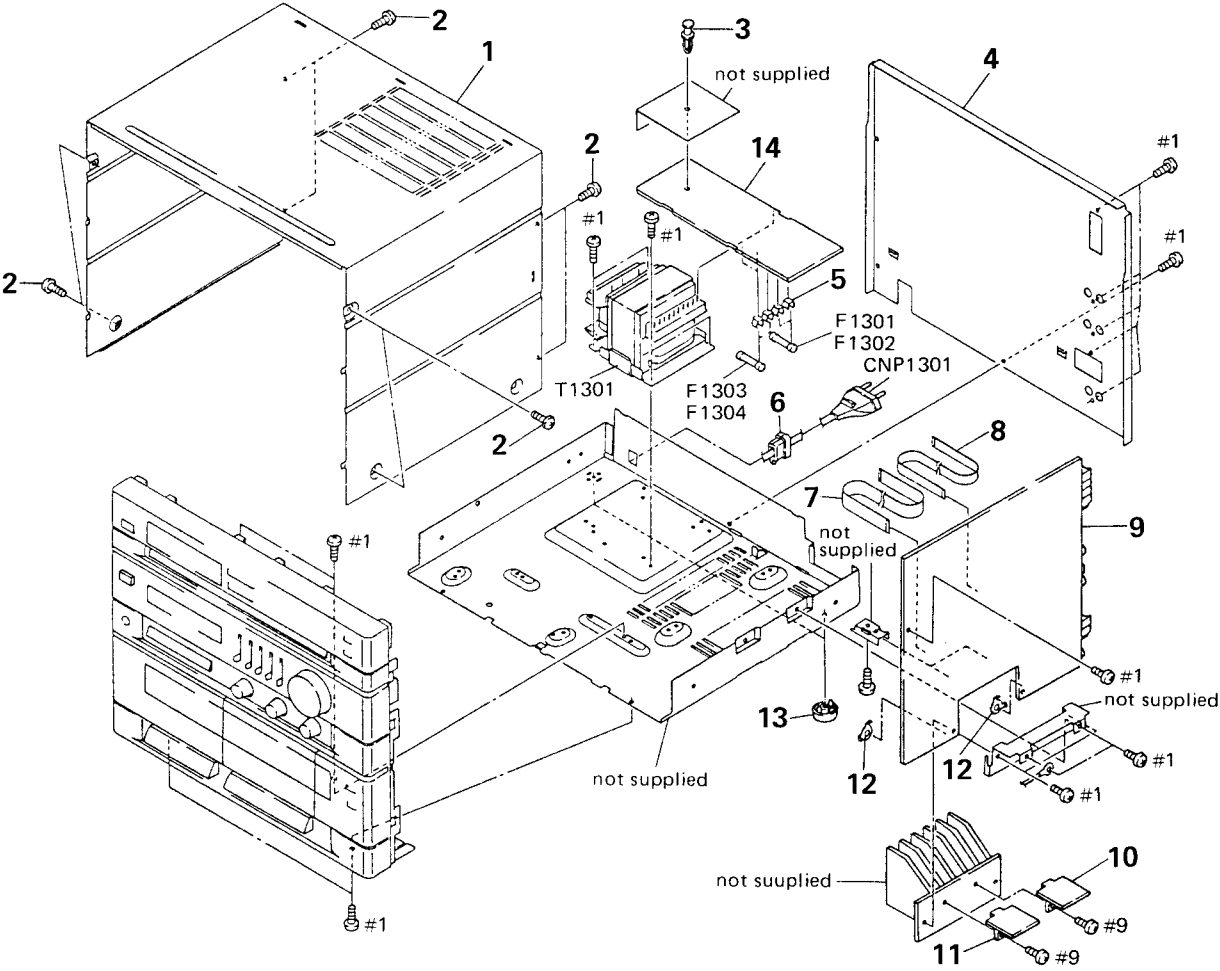
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Screw (# mark) list is given in the last of this parts list.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE)...(RED)

Parts Color Cabinet's Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

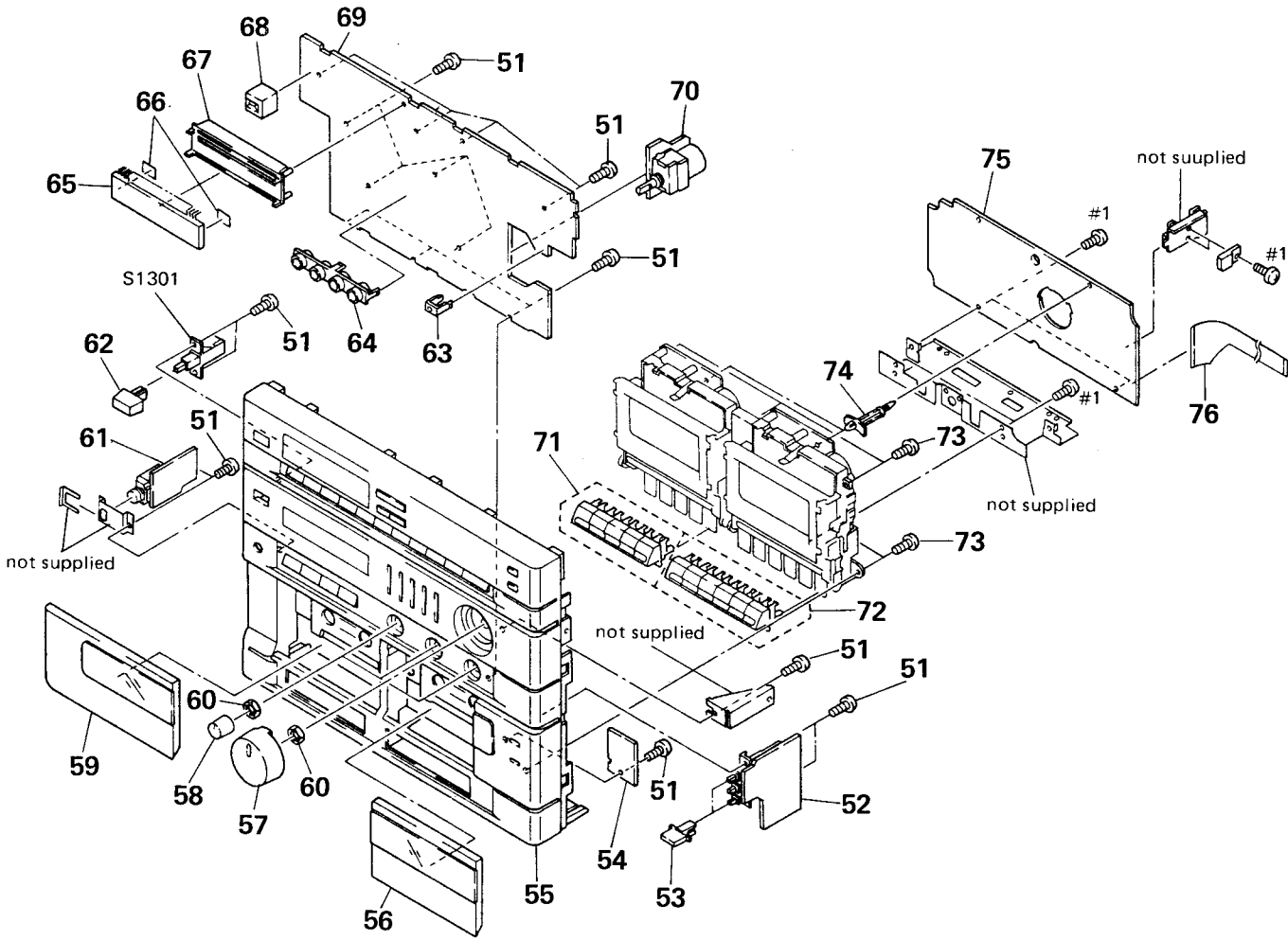
4-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	* 4-942-291-11	CASE	
2	3-363-099-01	SCREW (CASE +3X8 TP2)	
3	4-812-134-11	RIVET NYLON, 3.5	
4	* 4-942-267-11	PANEL, BACK	
5	1-533-217-31	HOLDER, FUSE	
6	* 3-703-244-00	BUSHING (2104), CORD	
7	1-575-906-11	WIRE, FLAT TYPE	
8	1-590-459-11	WIRE, FLAT TYPE	
9	* A-4338-831-A	MAIN COMBINED BOARD, COMPLETE	
10	* 1-637-661-11	PC BOARD, IC L	

Ref. No.	Part No.	Description	Remark
11	* 1-637-662-11	PC BOARD, IC R	
12	* 3-346-266-12	PLATE, GROUND	
13	X-4941-228-1	FOOT ASSY	
14	* 1-637-657-11	PC BOARD, POWER (A)	
	△CNP1301	1-555-750-00	CORD, POWER
	F1301 △	1-532-237-00	FUSE, TIME LAG (3.15A)
	F1302 △	1-532-237-00	FUSE, TIME LAG (3.15A)
	F1303 △	1-532-388-51	FUSE (2.0A)
	F1304 △	1-532-388-51	FUSE (2.0A)
	T1301 △	1-450-308-11	TRANSFORMER, POWER

4-2. FRONT PANEL SECTION

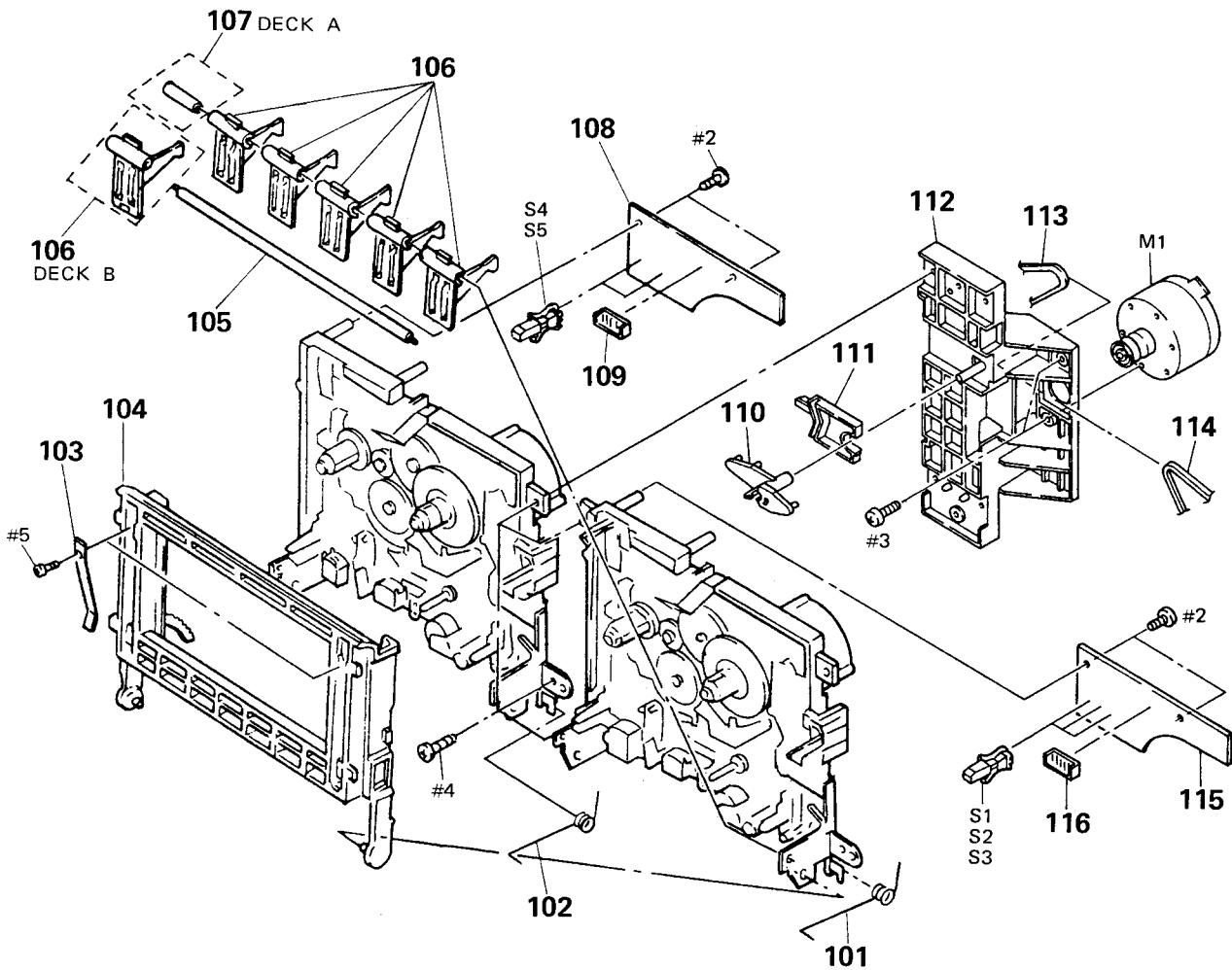


Ref. No.	Part No.	Description	Remark
51	4-928-635-21	SCREW, +BV (2.6X10) TAPPING	
52	* 1-637-658-11	PC BOARD, SW	
53	4-942-297-01	BUTTON (TC)	
54	* 1-637-659-11	PC BOARD, LED	
55	A-4323-780-A	PANEL ASSY, FRONT	
56	A-4323-779-A	LID (B) ASSY, CASSETTE	
57	A-4323-382-A	KNOB (VO) ASSY	
58	4-942-282-01	KNOB (B)	
59	A-4323-778-A	LID (A) ASSY, CASSETTE	
60	3-701-748-00	CLAMP	
61	* 1-637-656-11	PC BOARD, H.P	
62	4-930-783-11	BUTTON (PO)	
63	* 4-930-781-11	HOLDER (VO), LED	
64	* 4-942-285-01	HOLDER (FU), LED	

Ref. No.	Part No.	Description	Remark
65	1-519-594-21	INDICATOR TUBE, FLUORESCENT (FL601)	
66	* 4-921-941-01	CUSHION (FL)	
67	* 4-942-301-01	HOLDER, FL TUBE	
68	* 4-943-649-01	HOLDER (REC), LED	
69	* A-4341-419-A	PANEL BOARD, COMPLETE	
70	* 1-637-655-11	PC BOARD, VOL	
71	4-942-293-01	BUTTON (MD-A)	
72	4-942-294-01	BUTTON (MD-B)	
73	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
74	* 4-924-098-31	HOLDER, PC BOARD	
75	* A-2006-389-A	MAIN TC BOARD, COMPLETE	
76	* 1-535-888-11	JUNPER, FILM (WITH TERMINAL)	
S1301	△ 1-572-267-61	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	

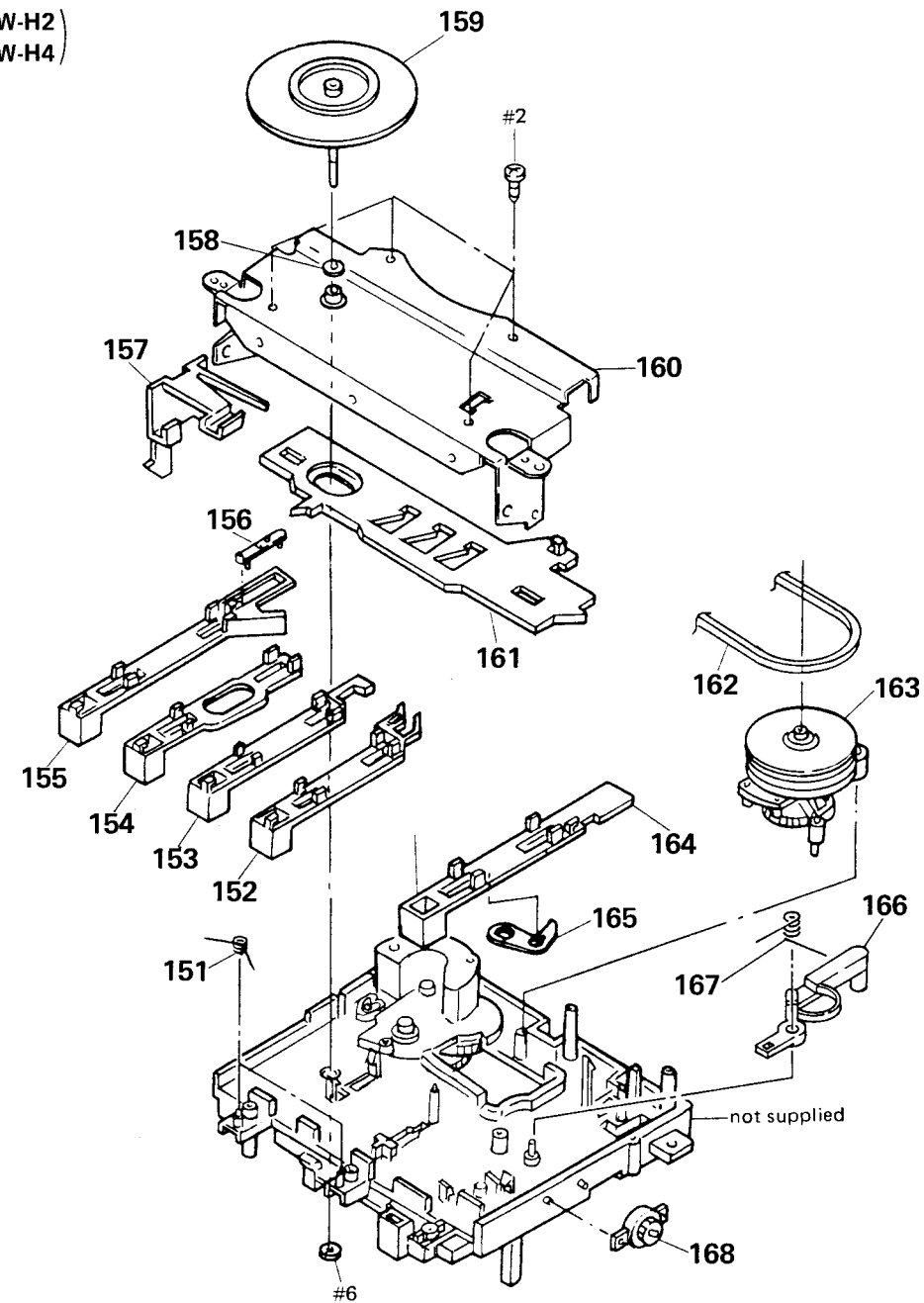
Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

4-3. MECHANISM DECK SECTION (1)
(TCM-180VW-H2)
(TCM-180VW-H4)



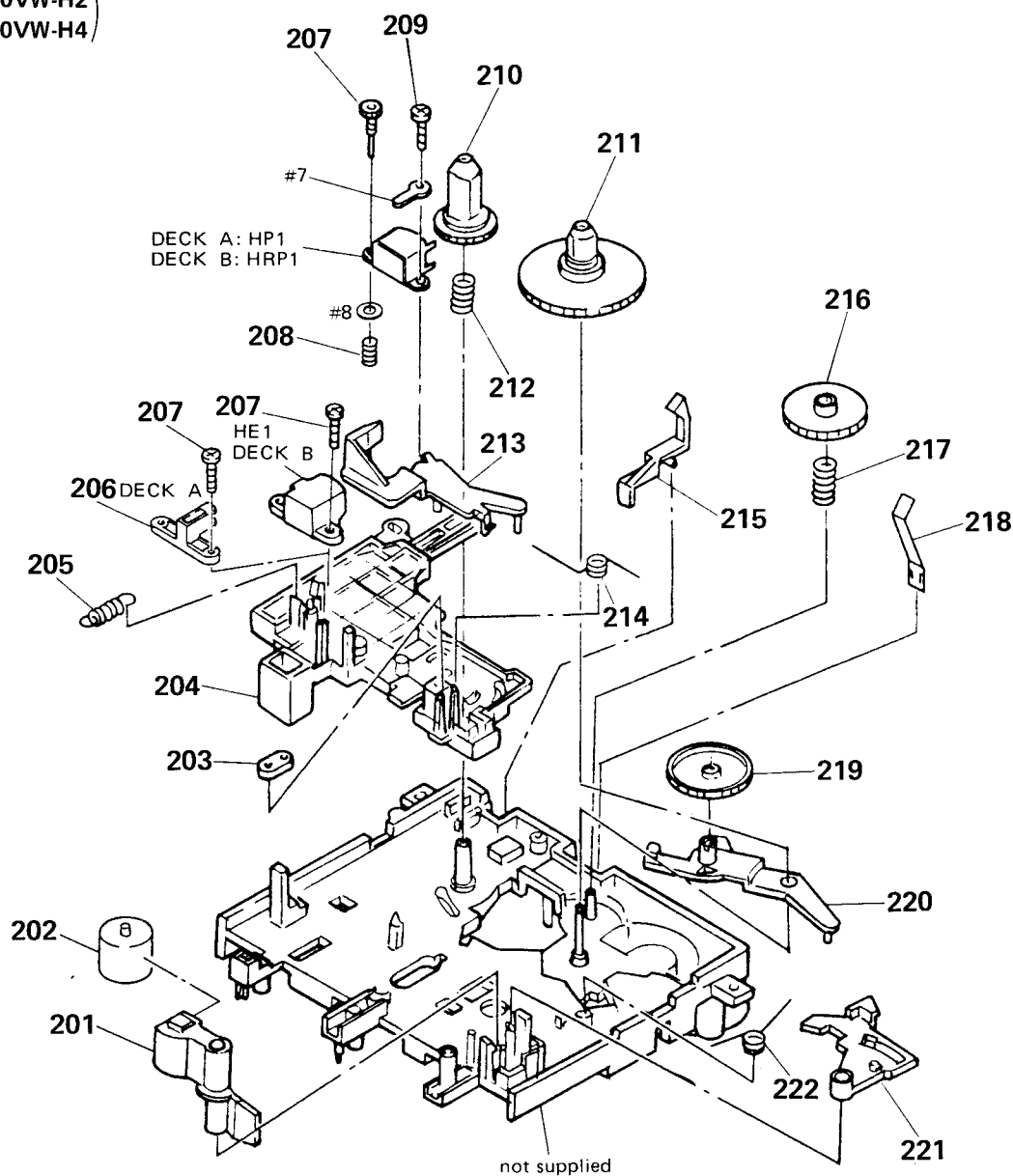
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-358-287-01	SPRING (LOADING A), TORSION		112	* 3-363-930-01	BRACKET (JOINT BASE)	
102	3-358-229-01	SPRING (LOADING), TORSION		113	3-358-230-01	BELT (A1)	
103	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF		114	3-364-777-01	BELT (WH)	
104	3-358-266-02	HOLDER, CASSETTE		115	* 1-637-868-11	PC BOARD, B DECK SW	
105	3-358-242-01	SHAFT (BUTTON SHAFT)		116	* 1-568-943-11	PIN, CONNECTOR 5P (CN416)	
106	3-358-210-01	LEVER (BUTTON BASE C)		M1	X-3362-377-1	MOTOR (WH) ASSY	
107	* 3-358-216-01	COLLAR		S1	1-571-736-11	SWITCH LEAF (MOTOR)	
108	* 1-637-867-11	PC BOARD, A DECK SW		S2	1-571-736-11	SWITCH LEAF (FWD)	
109	* 1-568-942-11	PIN, CONNECTOR 4P (CN415)		S3	1-571-736-11	SWITCH LEAF (REC)	
110	3-358-203-01	LEVER (TRIGGER)		S4	1-571-736-11	SWITCH LEAF (MOTOR)	
111	3-358-202-01	SLIDER (TRIGGER)		S5	1-571-736-11	SWITCH LEAF (FWD)	

4-4. MECHANISM DECK SECTION (2)
(TCM-180VW-H2)
(TCM-180VW-H4)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-358-232-01	SPRING (S-P F-R), TORSION		160	* X-3358-208-1	BRACKET (B) ASSY	
152	3-358-258-01	SLIDER (REW)		161	* 3-358-249-01	SLIDER (LOCK PLATE)	
153	3-358-257-01	SLIDER (FF)		162	3-358-230-01	BELT (A1)	
154	3-358-256-01	SLIDER (STOP/EJECT)		163	X-3358-202-1	LEVER (FR ARM) ASSY	
155	3-358-260-01	SLIDER (PAUSE)		164	3-358-259-01	SLIDER (REC)	
156	* 3-358-226-01	LEVER (PAUSE LEVER)		165	* 3-358-204-01	LEVER (REC SAFETY)	
157	* 3-358-261-02	SLIDER (HOLDER LOCK)		166	3-358-286-01	LEVER (MOTOR LEVER)	
158	3-701-437-01	WASHER		167	3-358-214-01	SPRING (LOCK), TORSION..... (DECK A)	
159	X-3358-205-1	FLYWHEEL (A) ASSY... (DECK A)		167	3-358-233-01	SPRING (REC-LOCK), TORSION... (DECK B)	
159	X-3358-206-1	FLYWHEEL (B) ASSY... (DECK B)		168	3-319-224-31	DAMPER, SMALL	

4-5. MECHANISM DECK SECTION (3)

(TCM-180VW-H2)
(TCM-180VW-H4)

Ref. No.	Part No.	Description	Remark
201	X-3358-204-1	LEVER (PINCH LEVER) ASSY	
202	3-578-143-11	PINCH ROLLER	
203	* 3-358-215-01	BUSHING (WIRE KIT RETAINER)	
204	3-358-265-01	SLIDER (HEAD PC BOARD A)	
205	3-358-217-01	SPRING, TENSION	
206	* 3-363-931-01	GUIDE, TAPE	
207	3-358-288-11	SCREW (T), AZIMUTH	
208	3-358-234-01	SPRING (AZIMUTH), COMPRESSION	
209	3-358-288-01	SCREW (T), AZIMUTH	
210	3-358-248-01	GEAR (SUPPLY REEL)	
211	X-3358-203-1	TABLE (T) ASSY, REEL	
212	3-358-208-01	SPRING (SUPPLY), COMPRESSION	

Ref. No.	Part No.	Description	Remark
213	* 3-358-251-01	LEVER (TENSION DETECTION ARM)	
214	3-358-228-01	SPRING, TORSION	
215	* 3-358-255-01	LEVER (GB LEVER)	
216	* 3-358-224-01	GEAR (FF GEAR)	
217	3-358-207-01	SPRING (FF GEAR), COMPRESSION	
218	3-358-227-01	SPRING, LEAF	
219	* 3-358-284-01	GEAR (TU GEAR)	
220	* 3-358-252-01	LEVER (TU ARM)	
221	* 3-358-253-01	LEVER (SHUT-OFF LEVER)	
222	3-358-243-01	SPRING (TU-SHUT), TORSION	
HE1	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
HRP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	

A DECK SW**B DECK SW****MAIN**

SECTION 5 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.
- Screw (# mark) list is given in the last of this parts list.

CAPACITORS:uF: μ F**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- uH: μ H

SEMICONDUCTORSIn each case, u: μ , for example:uA...: μ A, uPA...: μ PA...,
uPC...: μ PC, uPD...: μ PD...

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	* 1-637-867-11	A DECK SW BOARD *****			* A-4338-831-A	MAIN COMBINED BOARD, COMPLETE *****	
		< CAPACITOR >			* 1-637-661-11	IC L BOARD	
C544	1-164-159-11	CERAMIC 0.1uF	50V		* 1-637-662-11	IC R BOARD	
		< CONNECTOR >			* 3-346-266-12	PLATE, GROUND	
CN415	* 1-568-942-11	PIN. CONNECTOR 4P			4-352-844-01	PIN, LEAD, COATING	
		< SWITCH >			7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
S4	1-571-736-11	SWITCH, LEAF (MOTOR)				< CAPACITOR >	
S5	1-571-736-11	SWITCH, LEAF (FWD)		C302	1-124-477-11	ELECT 47uF 20% 25V	
*****				C303	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	* 1-637-868-11	B DECK SW BOARD *****		C307	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		< CAPACITOR >		C308	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C545	1-164-159-11	CERAMIC 0.1uF	50V	C309	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		< CONNECTOR >		C310	1-124-477-11	ELECT 47uF 20% 25V	
CN416	* 1-568-943-11	PIN. CONNECTOR 5P		C311	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		< SWITCH >		C312	1-101-006-00	CERAMIC 0.047uF 50V	
S1	1-571-736-11	SWITCH, LEAF (MOTOR)		C313	1-123-382-00	ELECT 3.3uF 20% 100V	
S2	1-571-736-11	SWITCH, LEAF (FWD)		C314	1-161-379-00	CERAMIC 0.01uF 20% 25V	
S3	1-571-736-11	SWITCH, LEAF (REC)		C315	1-161-329-00	CERAMIC 0.0068uF 30% 16V	
*****				C316	1-162-282-31	CERAMIC 100PF 10% 50V	
				C318	1-124-791-11	ELECT 1.0uF 20% 100V	
				C320	1-124-791-11	ELECT 1.0uF 20% 100V	
				C321	1-124-902-00	ELECT 0.47uF 20% 50V	
				C322	1-124-463-00	ELECT 0.1uF 20% 50V	
				C323	1-161-329-00	CERAMIC 0.0068uF 30% 16V	
				C324	1-161-329-00	CERAMIC 0.0068uF 30% 16V	
				C325	1-124-477-11	ELECT 47uF 20% 25V	
				C326	1-123-875-11	ELECT 10uF 20% 50V	
				C327	1-161-379-00	CERAMIC 0.01uF 20% 25V	
				C328	1-124-463-00	ELECT 0.1uF 20% 50V	
				C329	1-124-927-11	ELECT 4.7uF 20% 100V	
				C330	1-161-379-00	CERAMIC 0.01uF 20% 25V	
				C331	1-126-176-11	ELECT 220uF 20% 10V	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C332	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1056	1-161-374-11	CERAMIC	0.0015uF 20% 50V
C335	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1057	1-124-464-11	ELECT	0.22MF 20% 50V
C336	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1058	1-124-477-11	ELECT	47uF 20% 25V
C339	1-162-210-31	CERAMIC	30PF 10% 50V	C1059	1-124-925-11	ELECT	2.2uF 20% 100V
C341	1-123-382-00	ELECT	3.3uF 20% 100V	C1060	1-124-477-11	ELECT	47uF 20% 25V
C342	1-123-382-00	ELECT	3.3uF 20% 100V				
C343	1-123-382-00	ELECT	3.3uF 20% 100V	C1075	1-162-286-31	CERAMIC	220PF 10% 50V
C344	1-123-382-00	ELECT	3.3uF 20% 100V	C1076	1-162-286-31	CERAMIC	220PF 10% 50V
C345	1-161-375-00	CERAMIC	0.0022uF 20% 50V	C1201	1-124-925-11	ELECT	2.2uF 20% 100V
C346	1-161-375-00	CERAMIC	0.0022uF 20% 50V	C1202	1-162-282-31	CERAMIC	100PF 10% 50V
C351	1-161-494-00	CERAMIC	0.022uF 25V	C1203	1-162-282-31	CERAMIC	100PF 10% 50V
C352	1-102-120-00	CERAMIC	0.0018uF 10% 50V	C1204	1-124-477-11	ELECT	47uF 20% 25V
C353	1-161-374-11	CERAMIC	0.0015uF 20% 50V	C1205	1-123-875-11	ELECT	10uF 20% 50V
C354	1-161-494-00	CERAMIC	0.022uF 25V	C1206	1-136-163-00	FILM	0.068uF 5% 50V
C361	1-164-098-11	CERAMIC	0.047uF 12V	C1207	1-136-163-00	FILM	0.068uF 5% 50V
C362	1-161-494-00	CERAMIC	0.022uF 25V	C1209	1-123-875-11	ELECT	10uF 20% 50V
C363	1-164-159-11	CERAMIC	0.1uF 50V	C1210	1-126-101-11	ELECT	100uF 20% 16V
C364	1-161-494-00	CERAMIC	0.022uF 25V	C1211	1-126-101-11	ELECT	100uF 20% 16V
C501	1-102-961-00	CERAMIC	27PF 5% 50V	C1234	1-136-165-00	FILM	0.1uF 5% 50V
C502	1-102-961-00	CERAMIC	27PF 5% 50V	C1243	1-136-165-00	FILM	0.1uF 5% 50V
C503	1-124-477-11	ELECT	47uF 20% 25V	C1251	1-124-925-11	ELECT	2.2uF 20% 100V
C504	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1252	1-162-282-31	CERAMIC	100PF 10% 50V
C505	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1253	1-162-282-31	CERAMIC	100PF 10% 50V
C506	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1254	1-124-477-11	ELECT	47uF 20% 25V
C507	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1255	1-123-875-11	ELECT	10uF 20% 50V
C521	1-124-925-11	ELECT	2.2uF 20% 100V	C1256	1-136-163-00	FILM	0.068uF 5% 50V
C522	1-124-463-00	ELECT	0.1uF 20% 50V	C1257	1-136-163-00	FILM	0.068uF 5% 50V
C523	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1259	1-123-875-11	ELECT	10uF 20% 50V
C524	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1284	1-136-165-00	FILM	0.1uF 5% 50V
C525	1-124-477-11	ELECT	47uF 20% 25V	C1293	1-136-165-00	FILM	0.1uF 5% 50V
C531	1-136-173-00	FILM	0.47uF 5% 50V	C1302	1-102-394-11	CERAMIC	0.01uF 250V
C532	1-161-494-00	CERAMIC	0.022uF 25V	C1304	1-126-413-11	ELECT	3300uF 20% 35V
C533	1-124-463-00	ELECT	0.1uF 20% 50V	C1305	1-126-413-11	ELECT	3300uF 20% 35V
C1001	1-124-925-11	ELECT	2.2uF 20% 100V	C1306	1-124-477-11	ELECT	47uF 20% 25V
C1002	1-162-282-31	CERAMIC	100PF 10% 50V	C1308	1-126-101-11	ELECT	100uF 20% 16V
C1003	1-162-282-31	CERAMIC	100PF 10% 50V	C1309	1-126-101-11	ELECT	100uF 20% 16V
C1004	1-124-477-11	ELECT	47uF 20% 25V	C1312	1-124-563-11	ELECT	2200uF 20% 25V
C1005	1-161-377-00	CERAMIC	0.0047uF 20% 16V	C1313	1-124-563-11	ELECT	2200uF 20% 25V
C1006	1-161-374-11	CERAMIC	0.0015uF 20% 50V	C1319	1-124-463-00	ELECT	0.1uF 20% 50V
C1007	1-124-464-11	ELECT	0.22MF 20% 50V	C1320	1-123-875-11	ELECT	10uF 20% 50V
C1008	1-124-477-11	ELECT	47uF 20% 25V	C1321	1-161-379-00	CERAMIC	0.01uF 20% 25V
C1009	1-124-925-11	ELECT	2.2uF 20% 100V	C1322	1-161-379-00	CERAMIC	0.01uF 20% 25V
C1010	1-124-477-11	ELECT	47uF 20% 25V	C1324	1-123-875-11	ELECT	10uF 20% 50V
C1025	1-162-286-31	CERAMIC	220PF 10% 50V	C1326	1-123-875-11	ELECT	10uF 20% 50V
C1026	1-162-286-31	CERAMIC	220PF 10% 50V	C1330	1-126-101-11	ELECT	100uF 20% 16V
C1051	1-124-925-11	ELECT	2.2uF 20% 100V	C1331	1-102-394-11	CERAMIC	0.01uF 250V
C1052	1-162-282-31	CERAMIC	100PF 10% 50V	C1335	1-123-875-11	ELECT	10uF 20% 50V
C1053	1-162-282-31	CERAMIC	100PF 10% 50V	C1336	1-126-101-11	ELECT	100uF 20% 16V
C1054	1-124-477-11	ELECT	47uF 20% 25V	C1341	1-123-875-11	ELECT	10uF 20% 50V
C1055	1-161-377-00	CERAMIC	0.0047uF 20% 16V				

MAIN

Ref. No.	Part No.	Description	Remark
C1353	1-136-165-00	FILM 0.1uF 5% 50V	
C1354	1-136-165-00	FILM 0.1uF 5% 50V	
< FILTER >			
CF301	1-567-389-11	FILTER, CERAMIC	
CF303	1-567-389-11	FILTER, CERAMIC	
CF304	1-577-075-11	OSCILLATOR, CERAMIC	
< CONNECTOR >			
CN501	* 1-568-830-11	SOCKET, CONNECTOR 11P	
CN1001	* 1-580-691-11	JACK, PIN 2P (CD)	
CN1002	* 1-580-691-11	JACK, PIN 2P (PHONO)	
CN1201	1-537-326-11	TERMINAL BOARD (SPEAKER)	
CN1202	* 1-569-130-11	JACK, PIN 2P (SURROUND SPEAKER)	
CN1203	* 1-568-952-11	PIN, CONNECTOR 3P	
CN1204	* 1-568-834-11	SOCKET, CONNECTOR 15P	
CN1211	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN1212	* 1-564-508-11	PLUG, CONNECTOR 5P	
CN1301	* 1-566-210-11	PIN, CONNECTOR 3P (PHONO)	
< DIODE >			
D351	8-719-987-63	DIODE 1N4148M	
D1201	8-719-987-63	DIODE 1N4148M	
D1202	8-719-987-63	DIODE 1N4148M	
D1302	8-719-312-09	DIODE RBA-402	
D1303	8-719-200-82	DIODE 11ES2	
D1304	8-719-200-82	DIODE 11ES2	
D1305	8-719-200-82	DIODE 11ES2	
D1306	8-719-200-82	DIODE 11ES2	
D1321	8-719-987-63	DIODE 1N4148M	
D1341	8-719-001-76	DIODE UZL-12M3	
FE301	1-465-006-11	FRONT END (FM) (2 GANG)	
FE351	1-236-463-11	ENCAPSULATED COMPONENT	
FE352	1-236-462-11	ENCAPSULATED COMPONENT	
< IC >			
IC301	8-759-821-45	IC LA1851N	
IC501	8-759-820-91	IC LC7218	
IC1001	8-759-634-51	IC M5218AP	
IC1002	8-759-000-48	IC MC14052BCP	
IC1003	8-759-634-51	IC M5218AP	
IC1201	8-759-502-33	IC S1-18752	
IC1251	8-759-502-33	IC S1-18752	
IC1303	8-759-604-86	IC M5F7807	
IC1304	8-759-604-90	IC M5F7907	
IC1305	8-759-820-13	IC L78MR06	
IC1306	8-759-604-33	IC M5F7812	
IFT301	1-404-713-11	TRANSFORMER, IF	

Ref. No.	Part No.	Description	Remark
< COIL >			
L301	1-407-500-00	INDUCTOR 4.7mH	
L351	1-410-524-41	INDUCTOR 220uH	
L1201	* 1-420-872-00	COIL, AIR CORE	
L1251	* 1-420-872-00	COIL, AIR CORE	
LPF301	1-235-164-00	FILTER, LOW PASS	
LPF302	1-235-164-00	FILTER, LOW PASS	
< TRANSISTOR >			
Q303	8-729-230-99	TRANSISTOR 2SC2669-OY	
Q304	8-729-230-99	TRANSISTOR 2SC2669-OY	
Q305	8-729-900-80	TRANSISTOR DTC114ES	
Q306	8-729-900-61	TRANSISTOR DTA114ES	
Q307	8-729-900-80	TRANSISTOR DTC114ES	
Q308	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q309	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q351	8-729-900-80	TRANSISTOR DTC114ES	
Q352	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q353	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q354	8-729-900-80	TRANSISTOR DTC114ES	
Q355	8-729-900-80	TRANSISTOR DTC114ES	
Q356	8-729-900-80	TRANSISTOR DTC114ES	
Q501	8-729-900-80	TRANSISTOR DTC114ES	
Q502	8-729-900-61	TRANSISTOR DTA114ES	
Q521	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q522	8-729-201-84	TRANSISTOR 2SC3112-B	
Q531	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q532	8-729-201-84	TRANSISTOR 2SC3112-B	
Q1201	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1204	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1302	8-729-209-15	TRANSISTOR 2SD2012	
< RESISTOR >			
R301	△ 1-249-401-11	CARBON 47 5% 1/4W	
R302	1-249-413-11	CARBON 470 5% 1/4W	
R308	1-249-411-11	CARBON 330 5% 1/4W	
R309	1-249-432-11	CARBON 18K 5% 1/4W	
R310	1-249-411-11	CARBON 330 5% 1/4W	
R311	1-249-434-11	CARBON 27K 5% 1/4W	
R312	1-249-414-11	CARBON 560 5% 1/4W	
R313	△ 1-249-405-11	CARBON 100 5% 1/4W	
R315	△ 1-249-404-00	CARBON 82 5% 1/4W	
R316	1-249-429-11	CARBON 10K 5% 1/4W	
R317	1-249-417-11	CARBON 1K 5% 1/4W	
R318	1-249-435-11	CARBON 33K 5% 1/4W	
R319	1-249-428-11	CARBON 8.2K 5% 1/4W	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R320	1-249-432-11	CARBON	18K 5% 1/4W	R527	1-249-425-11	CARBON	4.7K 5% 1/4W
R321	1-249-423-11	CARBON	3.3K 5% 1/4W	R528	1-249-425-11	CARBON	4.7K 5% 1/4W
R322	1-249-429-11	CARBON	10K 5% 1/4W	R529	1-249-405-11	CARBON	100 5% 1/4W
R323	1-249-418-11	CARBON	1.2K 5% 1/4W	R530 	1-249-405-11	CARBON	100 5% 1/4W
R324	1-249-429-11	CARBON	10K 5% 1/4W	R531	1-249-423-11	CARBON	3.3K 5% 1/4W
R325	1-249-429-11	CARBON	10K 5% 1/4W	R532	1-249-433-11	CARBON	22K 5% 1/4W
R326 	1-249-409-11	CARBON	220 5% 1/4W	R533	1-249-414-11	CARBON	560 5% 1/4W
R327	1-249-437-11	CARBON	47K 5% 1/4W	R534	1-249-417-11	CARBON	1K 5% 1/4W
R328	1-249-437-11	CARBON	47K 5% 1/4W	R535	1-249-410-11	CARBON	270 5% 1/4W
R331	1-247-891-00	CARBON	330K 5% 1/4W	R536	1-249-421-11	CARBON	2.2K 5% 1/4W
R332	1-247-891-00	CARBON	330K 5% 1/4W	R537	1-249-425-11	CARBON	4.7K 5% 1/4W
R333	1-249-421-11	CARBON	2.2K 5% 1/4W	R538	1-249-405-11	CARBON	100 5% 1/4W
R334	1-249-421-11	CARBON	2.2K 5% 1/4W	R1001	1-249-417-11	CARBON	1K 5% 1/4W
R335	1-249-420-11	CARBON	1.8K 5% 1/4W	R1002	1-249-441-11	CARBON	100K 5% 1/4W
R336	1-249-420-11	CARBON	1.8K 5% 1/4W	R1003	1-249-416-11	CARBON	820 5% 1/4W
R337	1-249-426-11	CARBON	5.6K 5% 1/4W	R1004	1-247-897-11	CARBON	560K 5% 1/4W
R338	1-249-426-11	CARBON	5.6K 5% 1/4W	R1005	1-249-437-11	CARBON	47K 5% 1/4W
R351	1-249-433-11	CARBON	22K 5% 1/4W	R1006	1-249-409-11	CARBON	220 5% 1/4W
R352	1-249-437-11	CARBON	47K 5% 1/4W	R1007	1-249-441-11	CARBON	100K 5% 1/4W
R353	1-247-903-00	CARBON	1M 5% 1/4W	R1008	1-249-409-11	CARBON	220 5% 1/4W
R354	1-249-441-11	CARBON	100K 5% 1/4W	R1010	1-249-422-11	CARBON	2.7K 5% 1/4W
R355	1-249-433-11	CARBON	22K 5% 1/4W	R1011	1-249-428-11	CARBON	8.2K 5% 1/4W
R356	1-249-421-11	CARBON	2.2K 5% 1/4W	R1014	1-249-437-11	CARBON	47K 5% 1/4W
R361	1-249-437-11	CARBON	47K 5% 1/4W	R1015	1-249-437-11	CARBON	47K 5% 1/4W
R362	1-249-437-11	CARBON	47K 5% 1/4W	R1016	1-249-421-11	CARBON	2.2K 5% 1/4W
R363	1-249-425-11	CARBON	4.7K 5% 1/4W	R1017	1-249-421-11	CARBON	2.2K 5% 1/4W
R364	1-249-425-11	CARBON	4.7K 5% 1/4W	R1021	1-249-434-11	CARBON	27K 5% 1/4W
R365	1-249-429-11	CARBON	10K 5% 1/4W	R1023	1-249-434-11	CARBON	27K 5% 1/4W
R366	1-249-413-11	CARBON	470 5% 1/4W	R1024	1-249-417-11	CARBON	1K 5% 1/4W
R367	1-249-434-11	CARBON	27K 5% 1/4W	R1051	1-249-417-11	CARBON	1K 5% 1/4W
R368	1-249-433-11	CARBON	22K 5% 1/4W	R1052	1-249-441-11	CARBON	100K 5% 1/4W
R501	1-249-417-11	CARBON	1K 5% 1/4W	R1053	1-249-416-11	CARBON	820 5% 1/4W
R502	1-249-417-11	CARBON	1K 5% 1/4W	R1054	1-247-897-11	CARBON	560K 5% 1/4W
R503	1-249-417-11	CARBON	1K 5% 1/4W	R1055	1-249-437-11	CARBON	47K 5% 1/4W
R504	1-249-417-11	CARBON	1K 5% 1/4W	R1056	1-249-409-11	CARBON	220 5% 1/4W
R505	1-249-429-11	CARBON	10K 5% 1/4W	R1057	1-249-441-11	CARBON	100K 5% 1/4W
R506	1-249-417-11	CARBON	1K 5% 1/4W	R1058	1-249-409-11	CARBON	220 5% 1/4W
R510 	1-249-401-11	CARBON	47 5% 1/4W	R1060	1-249-422-11	CARBON	2.7K 5% 1/4W
R511	1-249-429-11	CARBON	10K 5% 1/4W	R1061	1-249-428-11	CARBON	8.2K 5% 1/4W
R512	1-249-425-11	CARBON	4.7K 5% 1/4W	R1071	1-249-434-11	CARBON	27K 5% 1/4W
R513	1-249-417-11	CARBON	1K 5% 1/4W	R1073	1-249-434-11	CARBON	27K 5% 1/4W
R514	1-249-429-11	CARBON	10K 5% 1/4W	R1074	1-249-417-11	CARBON	1K 5% 1/4W
R515	1-249-417-11	CARBON	1K 5% 1/4W	R1201	1-249-417-11	CARBON	1K 5% 1/4W
R521	1-249-423-11	CARBON	3.3K 5% 1/4W	R1202	1-249-434-11	CARBON	27K 5% 1/4W
R522	1-249-425-11	CARBON	4.7K 5% 1/4W	R1203	1-249-414-11	CARBON	560 5% 1/4W
R523	1-249-414-11	CARBON	560 5% 1/4W	R1204	1-249-434-11	CARBON	27K 5% 1/4W
R524	1-249-417-11	CARBON	1K 5% 1/4W	R1205	1-249-393-11	CARBON	10 5% 1/4W
R525	1-249-410-11	CARBON	270 5% 1/4W	R1210	1-249-441-11	CARBON	100K 5% 1/4W
R526	1-249-421-11	CARBON	2.2K 5% 1/4W	R1211	1-249-389-11	CARBON	4.7 5% 1/4W

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

MAIN

MAIN TC

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R1212	1-249-438-11	CARBON	56K 5% 1/4W	C406	1-124-767-00	ELECT	2.2uF 20% 50V
R1213	1-249-438-11	CARBON	56K 5% 1/4W	C407	1-124-443-00	ELECT	100uF 20% 10V
R1221 Δ	1-215-887-00	METAL OXIDE	150 5% 2W F	C408	1-130-479-00	MYLAR	0.0047uF 5% 50V
R1222	1-249-397-11	CARBON	22 5% 1/4W	C409	1-162-289-31	CERAMIC	390PF 10% 50V
R1223	1-249-397-11	CARBON	22 5% 1/4W	C410	1-124-791-11	ELECT	1.0uF 20% 100V
R1231	1-249-393-11	CARBON	10 5% 1/4W	C411	1-124-925-11	ELECT	2.2uF 20% 100V
R1251	1-249-417-11	CARBON	1K 5% 1/4W	C413	1-124-472-11	ELECT	470uF 20% 10V
R1252	1-249-434-11	CARBON	27K 5% 1/4W	C414	1-131-587-11	TANTALUM	0.68uF 10% 35V
R1253	1-249-414-11	CARBON	560 5% 1/4W	C415	1-124-925-11	ELECT	2.2uF 20% 100V
R1254	1-249-434-11	CARBON	27K 5% 1/4W	C416	1-124-927-11	ELECT	4.7uF 20% 100V
R1255	1-249-393-11	CARBON	10 5% 1/4W	C417	1-124-902-00	ELECT	0.47uF 20% 50V
R1263	1-249-437-11	CARBON	47K 5% 1/4W	C418	1-123-875-11	ELECT	10uF 20% 50V
R1272	1-249-397-11	CARBON	22 5% 1/4W	C419	1-123-875-11	ELECT	10uF 20% 50V
R1273	1-249-397-11	CARBON	22 5% 1/4W	C420	1-123-875-11	ELECT	10uF 20% 50V
R1281	1-249-393-11	CARBON	10 5% 1/4W	C421	1-162-284-31	CERAMIC	150PF 10% 50V
R1321	1-249-417-11	CARBON	1K 5% 1/4W	C422	1-136-273-91	FILM	75PF 5% 630V
R1322	1-249-429-11	CARBON	10K 5% 1/4W	C423	1-136-271-00	FILM	56PF 5% 630V
R1345	1-249-422-11	CARBON	2.7K 5% 1/4W	C424	1-162-280-31	CERAMIC	82PF 10% 50V
R1346	1-249-425-11	CARBON	4.7K 5% 1/4W	C441	1-162-282-31	CERAMIC	100PF 10% 50V
< VARIABLE RESISTOR >				C442	1-164-159-11	CERAMIC	0.1uF 50V
RV301	1-238-601-11	RES. ADJ. CARBON. 22K		C443	1-124-791-11	ELECT	1.0uF 20% 100V
RV302	1-238-601-11	RES. ADJ. CARBON. 22K		C446	1-162-282-31	CERAMIC	100PF 10% 50V
RY1201	1-515-533-11	RELAY		C500	1-162-289-31	CERAMIC	390PF 10% 50V
< TRANSFORMER >				C501	1-136-157-00	FILM	0.022uF 5% 50V
T301	1-404-807-11	TRANSFORMER, DISCRIMINATOR		C502	1-124-767-00	ELECT	2.2uF 20% 50V
TM301	* 1-537-264-11	TERMINAL BOARD (ANTENNA)		C503	1-124-443-00	ELECT	100uF 20% 10V
TP1	* 1-560-060-00	PIN. CONNECTOR 2P		C504	1-162-289-31	CERAMIC	390PF 10% 50V
XT501	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)		C505	1-136-157-00	FILM	0.022uF 5% 50V
*****				C506	1-124-767-00	ELECT	2.2uF 20% 50V
* A-2006-389-A MAIN TC BOARD, COMPLETE				C507	1-124-443-00	ELECT	100uF 20% 10V
*****				C508	1-130-479-00	MYLAR	0.0047uF 5% 50V
1-535-888-11 JUMPER, FILM (WITH TERMINAL)				C509	1-162-289-31	CERAMIC	390PF 10% 50V
7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S				C511	1-124-925-11	ELECT	2.2uF 20% 100V
< CAPACITOR >				C513	1-124-472-11	ELECT	470uF 20% 10V
C400	1-162-289-31	CERAMIC	390PF 10% 50V	C514	1-131-587-11	TANTALUM	0.68uF 10% 35V
C401	1-136-157-00	FILM	0.022uF 5% 50V	C515	1-124-925-11	ELECT	2.2uF 20% 100V
C402	1-124-767-00	ELECT	2.2uF 20% 50V	C516	1-124-927-11	ELECT	4.7uF 20% 100V
C403	1-124-443-00	ELECT	100uF 20% 10V	C517	1-124-902-00	ELECT	0.47uF 20% 50V
C404	1-162-289-31	CERAMIC	390PF 10% 50V	C518	1-123-875-11	ELECT	10uF 20% 50V
C405	1-136-157-00	FILM	0.022uF 5% 50V	C520	1-123-875-11	ELECT	10uF 20% 50V
				C521	1-162-284-31	CERAMIC	150PF 10% 50V
				C522	1-136-273-91	FILM	75PF 5% 630V
				C523	1-136-271-00	FILM	56PF 5% 630V
				C524	1-162-280-31	CERAMIC	82PF 10% 50V
				C525	1-136-562-11	FILM	0.0082uF 5% 630V
				C526	1-130-482-00	MYLAR	0.0082uF 5% 50V
				C527	1-124-925-11	ELECT	2.2uF 20% 100V
				C528	1-130-482-00	MYLAR	0.0082uF 5% 50V
				C529	1-130-478-00	MYLAR	0.0039uF 5% 50V

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

MAIN TC

Ref. No.	Part No.	Description	Remark
C530	1-130-478-00	MYLAR 0.0039uF 5% 50V	
C531	1-124-902-00	ELECT 0.47uF 20% 50V	
C532	1-124-925-11	ELECT 2.2uF 20% 100V	
C533	1-124-556-11	ELECT 2200uF 20% 16V	
C534	1-124-120-11	ELECT 220uF 20% 25V	
C535	1-124-927-11	ELECT 4.7uF 20% 100V	
C536	1-124-791-11	ELECT 1.0uF 20% 100V	
C537	1-124-925-11	ELECT 2.2uF 20% 100V	
C540	1-124-472-11	ELECT 470uF 20% 10V	
C541	1-162-282-31	CERAMIC 100PF 10% 50V	
C542	1-164-159-11	CERAMIC 0.1uF 50V	
C546	1-162-282-31	CERAMIC 100PF 10% 50V	
C560	1-124-472-11	ELECT 470uF 20% 10V	

< CONNECTOR >

CN400	* 1-564-506-11	PLUG, CONNECTOR 3P	
CN401	* 1-564-509-11	PLUG, CONNECTOR 6P	
CN402	* 1-564-505-11	PLUG, CONNECTOR 2P	
CN405	* 1-560-061-00	PIN, CONNECTOR 3P	
CN412	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	

< DIODE >

D500	8-719-987-63	DIODE 1N4148M	
D501	8-719-987-63	DIODE 1N4148M	
D502	8-719-987-63	DIODE 1N4148M	
D503	8-719-987-63	DIODE 1N4148M	
D504	8-719-987-63	DIODE 1N4148M	
D505	8-719-987-63	DIODE 1N4148M	
D506	8-719-987-63	DIODE 1N4148M	
D507	8-719-987-63	DIODE 1N4148M	

< IC >

IC400	8-759-111-44	IC uPC570C-1	
IC401	8-759-111-44	IC uPC570C-1	
IC402	8-759-000-49	IC MC14066BCP	
IC403	8-752-031-67	IC CXA1100P	
IC404	8-752-038-02	IC CXA1198AP	
IC501	8-759-140-11	IC uPD4011BC	
IC502	8-759-240-01	IC TC4001BP	
IC503	8-759-140-11	IC uPD4011BC	
IC515	8-759-604-86	IC M5F7807L	
IC516	8-759-604-90	IC M5F7907L	

< COIL >

L400	1-410-780-11	INDUCTOR 27mH	
L500	1-410-780-11	INDUCTOR 27mH	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q400	8-729-900-89	TRANSISTOR DTC144ES	
Q401	8-729-900-89	TRANSISTOR DTC144ES	
Q402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q403	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q500	8-729-900-89	TRANSISTOR DTC144ES	
Q502	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q503	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q504	8-729-194-57	TRANSISTOR 2SC945-P	
Q505	8-729-194-57	TRANSISTOR 2SC945-P	
Q506	8-729-281-52	TRANSISTOR 2SC1815-Y	
Q507	8-729-900-61	TRANSISTOR DTA114ES	
Q508	8-729-900-80	TRANSISTOR DTC114ES	
Q511	8-729-900-65	TRANSISTOR DTA144ES	

< RESISTOR >

R415	1-215-460-00	METAL 43K 1% 1/6W	
R431	1-249-435-11	CARBON 33K 5% 1/4W	
R432	1-247-868-11	CARBON 36K 5% 1/4W	
R433	1-247-883-00	CARBON 150K 5% 1/4W	
R436	1-249-437-11	CARBON 47K 5% 1/4W	
R437	1-249-437-11	CARBON 47K 5% 1/4W	
R438	1-247-874-11	CARBON 62K 5% 1/4W	
R439	1-249-440-11	CARBON 82K 5% 1/4W	
R441	1-247-882-11	CARBON 130K 5% 1/4W	
R527	1-249-441-11	CARBON 100K 5% 1/4W	
R532	1-249-393-11	CARBON 10 5% 1/4W	
R538	1-249-385-11	CARBON 2.2 5% 1/6W	
R539	1-249-392-11	CARBON 8.2 5% 1/4W	
R540	1-249-392-11	CARBON 8.2 5% 1/4W	

< VARIABLE RESISTOR >

RV400	1-238-600-11	RES. ADJ. CARBON 10K	
RV401	1-238-600-11	RES. ADJ. CARBON 10K	
RV402	1-238-600-11	RES. ADJ. CARBON 10K	
RV403	1-238-603-11	RES. ADJ. CARBON 100K	
RV500	1-238-600-11	RES. ADJ. CARBON 10K	
RV501	1-238-600-11	RES. ADJ. CARBON 10K	
RV502	1-238-600-11	RES. ADJ. CARBON 10K	
RV503	1-238-603-11	RES. ADJ. CARBON 100K	
RV505	1-238-598-11	RES. ADJ. CARBON 2.2K	
RY400	1-515-614-11	RELAY	

< TRANSFORMER >

T500	1-433-349-11	TRANSFORMER, BIAS OSCILLATION	
------	--------------	-------------------------------	--

PANEL

Ref. No.	Part No.	Description	Remark
	* A-4341-419-A	PANEL COMBINED BOARD, COMPLETE *****	
	1-533-217-31	HOLDER, FUSE	
	1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	
	1-535-476-11	TERMINAL	
	* 1-637-655-11	VOL BOARD	
	* 1-637-656-11	H. P BOARD	
	* 1-637-657-11	POWER (A) BOARD	
	* 1-637-658-11	SW BOARD	
	* 1-637-659-11	LED BOARD	
	* 4-921-941-01	CUSHION (FL)	
	* 4-930-781-11	HOLDER (VO), LED	
	* 4-942-285-01	HOLDER (FU), LED	
	* 4-942-301-01	HOLDER, FL TUBE	
	< CAPACITOR >		
C603	1-136-169-00	FILM 0.22uF 5% 50V	
C604	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C605	1-125-486-11	DUBLE LAYERS 0.22F 5.5V	
C606	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C607	1-123-875-11	ELECT 10uF 20% 50V	
C608	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C609	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C701	1-124-791-11	ELECT 1.0uF 20% 100V	
C1101	1-124-257-00	ELECT 2.2uF 20% 50V	
C1102	1-124-589-11	ELECT 47uF 20% 16V	
C1103	1-162-282-31	CERAMIC 100PF 10% 50V	
C1104	1-124-257-00	ELECT 2.2uF 20% 50V	
C1105	1-124-464-11	ELECT 0.22MF 20% 50V	
C1106	1-136-161-00	FILM 0.047uF 5% 50V	
C1107	1-136-155-00	FILM 0.015uF 5% 50V	
C1108	1-136-155-00	FILM 0.015uF 5% 50V	
C1109	1-130-480-00	MYLAR 0.0056uF 5% 50V	
C1110	1-161-327-00	CERAMIC 0.0033uF 20% 16V	
C1111	1-136-155-00	FILM 0.015uF 5% 50V	
C1112	1-136-157-00	FILM 0.022uF 5% 50V	
C1113	1-136-153-00	FILM 0.01uF 5% 50V	
C1114	1-161-377-00	CERAMIC 0.0047uF 20% 16V	
C1115	1-124-257-00	ELECT 2.2uF 20% 50V	
C1120	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C1121	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C1123	1-162-286-31	CERAMIC 220PF 10% 50V	
C1151	1-124-257-00	ELECT 2.2uF 20% 50V	
C1152	1-124-589-11	ELECT 47uF 20% 16V	
C1153	1-162-282-31	CERAMIC 100PF 10% 50V	
C1154	1-124-257-00	ELECT 2.2uF 20% 50V	
C1155	1-124-464-11	ELECT 0.22MF 20% 50V	
C1156	1-136-161-00	FILM 0.047uF 5% 50V	
C1157	1-136-155-00	FILM 0.015uF 5% 50V	
C1158	1-136-155-00	FILM 0.015uF 5% 50V	

Ref. No.	Part No.	Description	Remark
C1159	1-130-480-00	MYLAR 0.0056uF 5% 50V	
C1160	1-161-327-00	CERAMIC 0.0033uF 20% 16V	
C1161	1-136-155-00	FILM 0.015uF 5% 50V	
C1162	1-136-157-00	FILM 0.022uF 5% 50V	
C1163	1-136-153-00	FILM 0.01uF 5% 50V	
C1164	1-161-377-00	CERAMIC 0.0047uF 20% 16V	
C1165	1-124-257-00	ELECT 2.2uF 20% 50V	
C1173	1-162-286-31	CERAMIC 220PF 10% 50V	
C1301	△ 1-161-744-00	CERAMIC 0.01uF 400V	
C1314	1-124-122-11	ELECT 100uF 20% 50V	
C1315	1-124-927-11	ELECT 4.7uF 20% 100V	
C1316	1-124-910-11	ELECT 47uF 20% 50V	
C1351	1-124-122-11	ELECT 100uF 20% 50V	
C1352	1-126-105-11	ELECT 1000uF 20% 35V	
C1361	1-124-122-11	ELECT 100uF 20% 50V	
	< CONNECTOR >		
CN601	* 1-568-830-11	SOCKET, CONNECTOR 11P	
CN701	* 1-568-833-11	SOCKET, CONNECTOR 14P	
CN1101	* 1-568-834-11	SOCKET, CONNECTOR 15P	
CN1202	* 1-564-520-11	PLUG, CONNECTOR 5P	
CN1301	* 1-564-521-11	PLUG, CONNECTOR 6P	
CN1302	* 1-564-519-11	PLUG, CONNECTOR 4P	
CNJ1201	1-569-113-11	JACK, LARGE TYPE (HEADPHONES)	
	< DIODE >		
D601	8-719-987-63	DIODE 1N4148M	
D602	8-719-010-26	DIODE UZ-3.9BSB	
D603	8-719-987-63	DIODE 1N4148M	
D604	8-719-987-63	DIODE 1N4148M	
D611	8-719-987-63	DIODE 1N4148M	
D612	8-719-987-63	DIODE 1N4148M	
D613	8-719-987-63	DIODE 1N4148M	
D614	8-719-987-63	DIODE 1N4148M	
D618	8-719-987-63	DIODE 1N4148M	
D625	8-719-987-63	DIODE 1N4148M	
D626	8-719-987-63	DIODE 1N4148M	
D641	8-719-200-82	DIODE 11ES2	
D702	8-719-301-38	DIODE SEL2210S-C	
D1131	8-719-301-38	DIODE SEL2210S-C	
D1132	8-719-301-38	DIODE SEL2210S-C	
D1133	8-719-301-38	DIODE SEL2210S-C	
D1134	8-719-301-38	DIODE SEL2210S-C	
D1145	8-719-301-38	DIODE SEL2210S-C	
D1151	8-719-987-63	DIODE 1N4148M	
D1152	8-719-987-63	DIODE 1N4148M	
D1307	8-719-934-21	DIODE HZS30-1L	
D1309	8-719-014-66	DIODE UZP-5.6B	
D1311	8-719-200-82	DIODE 11ES2	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

PANEL

Ref. No.	Part No.	Description	Remark
D1318	8-719-200-82	DIODE 11ES2	
D1319	8-719-200-82	DIODE 11ES2	
D1368	8-719-200-82	DIODE 11ES2	
D1369	8-719-200-82	DIODE 11ES2	
< FILTER >			
FL601	1-519-595-21	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC601	8-759-153-72	IC μ PD75217ACW-062 (#1~6000)	
IC601	8-759-154-08	IC μ PD75212ACW-276 (#6001 ~)	
IC602	8-749-920-83	IC GP1U52XB	
IC1101	8-759-634-51	IC M5218AP	
IC1102	8-759-634-51	IC M5218AP	
IC1103	8-759-820-62	IC LB1639	
IC1104	8-759-916-12	IC SN74HC00AN	
< COIL >			
L601	1-410-521-11	INDUCTOR 100uH	
< TRANSISTOR >			
Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q602	8-729-900-80	TRANSISTOR DTC114ES	
Q701	8-729-900-89	TRANSISTOR DTC144ES	
Q702	8-729-900-89	TRANSISTOR DTC144ES	
Q703	8-729-900-89	TRANSISTOR DTC144ES	
Q1101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1102	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q1136	8-729-900-36	TRANSISTOR DTC124ES	
Q1138	8-729-900-36	TRANSISTOR DTC124ES	
Q1141	8-729-900-63	TRANSISTOR DTA124ES	
Q1143	8-729-900-80	TRANSISTOR DTC114ES	
Q1144	8-729-900-80	TRANSISTOR DTC114ES	
Q1145	8-729-900-61	TRANSISTOR DTA114ES	
Q1151	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1152	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q1301	8-729-111-67	TRANSISTOR 2SB1094-L	
< RESISTOR >			
R601	1-249-429-11	CARBON 10K 5% 1/4W	
R602	1-249-429-11	CARBON 10K 5% 1/4W	
R603	1-249-423-11	CARBON 3.3K 5% 1/4W	
R604	1-249-437-11	CARBON 47K 5% 1/4W	
R605	1-249-433-11	CARBON 22K 5% 1/4W	
R606	1-249-433-11	CARBON 22K 5% 1/4W	
R607	1-249-439-11	CARBON 68K 5% 1/4W	
R608	1-249-417-11	CARBON 1K 5% 1/4W	
R609	1-249-405-11	CARBON 100 5% 1/4W	
R610	1-249-429-11	CARBON 10K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R611	1-249-421-11	CARBON 2.2K 5% 1/4W	
R612	1-249-417-11	CARBON 1K 5% 1/4W	
R701	1-249-417-11	CARBON 1K 5% 1/4W	
R702	1-249-437-11	CARBON 47K 5% 1/4W	
R703	1-249-424-11	CARBON 3.9K 5% 1/4W	
R706	1-249-416-11	CARBON 820 5% 1/4W	
R707	1-249-423-11	CARBON 3.3K 5% 1/4W	
R709	1-249-414-11	CARBON 560 5% 1/4W	
R1101	1-249-441-11	CARBON 100K 5% 1/4W	
R1102	1-249-417-11	CARBON 1K 5% 1/4W	
R1103	1-249-431-11	CARBON 15K 5% 1/4W	
R1104	1-249-441-11	CARBON 100K 5% 1/4W	
R1105	1-249-433-11	CARBON 22K 5% 1/4W	
R1106	1-249-424-11	CARBON 3.9K 5% 1/4W	
R1107	1-249-441-11	CARBON 100K 5% 1/4W	
R1108	1-249-427-11	CARBON 6.8K 5% 1/4W	
R1109	1-249-412-11	CARBON 390 5% 1/4W	
R1110	1-249-431-11	CARBON 15K 5% 1/4W	
R1111	1-249-439-11	CARBON 68K 5% 1/4W	
R1112	1-249-433-11	CARBON 22K 5% 1/4W	
R1113	1-249-431-11	CARBON 15K 5% 1/4W	
R1114	1-249-429-11	CARBON 10K 5% 1/4W	
R1115	1-249-429-11	CARBON 10K 5% 1/4W	
R1116	1-247-852-11	CARBON 7.5K 5% 1/4W	
R1117	1-247-852-11	CARBON 7.5K 5% 1/4W	
R1118	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1119	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1120	1-249-423-11	CARBON 3.3K 5% 1/4W	
R1121	1-249-423-11	CARBON 3.3K 5% 1/4W	
R1122	1-247-887-00	CARBON 220K 5% 1/4W	
R1123	1-249-421-11	CARBON 2.2K 5% 1/4W	
R1124	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1125	1-249-433-11	CARBON 22K 5% 1/4W	
R1131	1-249-413-11	CARBON 470 5% 1/4W	
R1132	1-249-413-11	CARBON 470 5% 1/4W	
R1133	1-249-413-11	CARBON 470 5% 1/4W	
R1134	1-249-413-11	CARBON 470 5% 1/4W	
R1135	1-249-433-11	CARBON 22K 5% 1/4W	
R1145	1-249-413-11	CARBON 470 5% 1/4W	
R1151	1-249-441-11	CARBON 100K 5% 1/4W	
R1152	1-249-417-11	CARBON 1K 5% 1/4W	
R1154	1-249-441-11	CARBON 100K 5% 1/4W	
R1155	1-249-433-11	CARBON 22K 5% 1/4W	
R1156	1-249-424-11	CARBON 3.9K 5% 1/4W	
R1157	1-249-441-11	CARBON 100K 5% 1/4W	
R1158	1-249-427-11	CARBON 6.8K 5% 1/4W	
R1159	1-249-412-11	CARBON 390 5% 1/4W	
R1160	1-249-431-11	CARBON 15K 5% 1/4W	
R1161	1-249-439-11	CARBON 68K 5% 1/4W	

PANEL

Ref. No.	Part No.	Description	Remark
R1162	1-249-433-11	CARBON 22K 5% 1/4W	
R1163	1-249-431-11	CARBON 15K 5% 1/4W	
R1164	1-249-429-11	CARBON 10K 5% 1/4W	
R1165	1-249-429-11	CARBON 10K 5% 1/4W	
R1166	1-247-852-11	CARBON 7.5K 5% 1/4W	
R1167	1-247-852-11	CARBON 7.5K 5% 1/4W	
R1168	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1169	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1170	1-249-423-11	CARBON 3.3K 5% 1/4W	
R1171	1-249-423-11	CARBON 3.3K 5% 1/4W	
R1172	1-247-887-00	CARBON 220K 5% 1/4W	
R1173	1-249-421-11	CARBON 2.2K 5% 1/4W	
R1174	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1206	1-249-415-11	CARBON 680 5% 1/4W	
R1207	1-249-415-11	CARBON 680 5% 1/4W	
R1256	1-249-415-11	CARBON 680 5% 1/4W	
R1257	1-249-415-11	CARBON 680 5% 1/4W	
R1303	1-249-421-11	CARBON 2.2K 5% 1/4W	
R1304	1-249-425-11	CARBON 4.7K 5% 1/4W	
< VARIABLE RESISTOR >			
RV1101	1-241-353-11	RES. VAR. CARBON 100K/100K (SURROUND)	
RV1102	1-241-353-11	RES. VAR. CARBON 100K/100K (DBFB)	
RV1103	1-241-351-11	RES. VAR. SLIDE 100K/100K (10kHz)	
RV1104	1-241-351-11	RES. VAR. SLIDE 100K/100K (3.3k)	
RV1105	1-241-351-11	RES. VAR. SLIDE 100K/100K (1kHz)	
RV1106	1-241-351-11	RES. VAR. SLIDE 100K/100K (330Hz)	
RV1107	1-241-351-11	RES. VAR. SLIDE 100K/100K (100Hz)	
RV1108	1-241-352-11	RES. VAR. CARBON 100K/100K (BALANCE)	
RV1109	1-241-350-11	RES. VAR. CARBON 100K/100K (VOLUME)	
< SWITCH >			
S601	1-554-303-21	SWITCH, TACTILE (1)	
S602	1-554-303-21	SWITCH, TACTILE (2)	
S603	1-554-303-21	SWITCH, TACTILE (3)	
S604	1-554-303-21	SWITCH, TACTILE (4)	
S605	1-554-303-21	SWITCH, TACTILE (5)	
S606	1-554-303-21	SWITCH, TACTILE (6)	
S607	1-554-303-21	SWITCH, TACTILE (7)	
S608	1-554-303-21	SWITCH, TACTILE (8)	
S609	1-554-303-21	SWITCH, TACTILE (9)	
S610	1-554-303-21	SWITCH, TACTILE (0)	
S614	1-554-303-21	SWITCH, TACTILE (DUAL MODE TUNING +)	
S615	1-554-303-21	SWITCH, TACTILE (DUAL MODE TUNING -)	
S616	1-554-303-21	SWITCH, TACTILE (SHIFT)	
S617	1-554-303-21	SWITCH, TACTILE (BAND SELECTOR)	
S618	1-554-303-21	SWITCH, TACTILE (ST/MUTE)	

Ref. No.	Part No.	Description	Remark
S619	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S636	1-554-303-21	SWITCH, TACTILE (TAPE)	
S637	1-554-303-21	SWITCH, TACTILE (CD)	
S638	1-554-303-21	SWITCH, TACTILE (TUNER)	
S639	1-554-303-21	SWITCH, TACTILE (PHONO)	
S701 } S702 }	1-572-604-11	SWITCH, PUSH (2 KEY) (TAPE SELECTOR/DOLBY NR)	
< CRYSTAL >			
X601	1-567-775-11	VIBRATOR, CERAMIC	

MISCELLANEOUS			

5	1-533-217-31	HOLDER, FUSE	
7	1-575-906-11	WIRE, FLAT TYPE	
8	1-590-459-11	WIRE, FLAT TYPE	
10	* 1-637-661-11	PC BOARD, IC L	
11	* 1-637-662-11	PC BOARD, IC R	
14	* 1-637-657-11	PC BOARD, POWER (A)	
52	* 1-637-658-11	PC BOARD, SW	
54	* 1-637-659-11	PC BOARD, LED	
61	* 1-637-656-11	PC BOARD, H, P	
65	1-519-594-21	INDICATOR TUBE, FLUORESCENT (FL601)	
70	* 1-637-655-11	PC BOARD, VOL	
76	* 1-535-888-11	JUNPER, FILM (WITH TERMINAL)	
108	* 1-637-867-11	PC BOARD, A DECK SW	
109	* 1-568-942-11	PIN, CONNECTOR 4P	
115	* 1-637-868-11	PC BOARD, B DECK SW	
116	* 1-568-943-11	PIN, CONNECTOR 5P (CN416)	
△CNP1301	1-555-750-00	CORD, POWER	
F1301 △	1-532-237-00	FUSE, TIME LAG (3.15A)	
F1302 △	1-532-237-00	FUSE, TIME LAG (3.15A)	
F1303 △	1-532-388-51	FUSE (2.0A)	
F1304 △	1-532-388-51	FUSE (2.0A)	
HE1	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
HRP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
S1	1-571-736-11	SWITCH LEAF	
S2	1-571-736-11	SWITCH LEAF	
S3	1-571-736-11	SWITCH LEAF	
S4	1-571-736-11	SWITCH LEAF	
S5	1-571-736-11	SWITCH LEAF	
S1301 △	1-572-267-61	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
T1301 △	1-450-308-11	TRANSFORMER, POWER	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
ACCESSORY & PACKING MATERIAL			
	1-465-358-21	REMOTE COMMANDER (RM-S130)	
	1-501-374-11	ANTENNA, LOOP	
	3-752-654-11	MANUAL, INSTRUCTION (ENGLISH, E. F. P)	
	3-752-654-41	MANUAL, INSTRUCTION (D, NL, S, I)	
	4-921-934-01	SHEET, PROTECTION	
*	4-943-690-01	INDIVIDUAL CARTON	
*	4-943-958-01	CUSHION	

SCREW

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#2	7-685-133-19	SCREW +P 2.6X6 TYPE1
#3	7-621-775-20	SCREW +B 2.6X5
#4	7-685-135-19	SCREW +BTP 2.6X10 TYPE2 N-S
#5	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT
#6	7-623-921-01	RING, RETAINING, CAPSTAN
#7	7-623-505-01	LUG, 2
#8	7-688-001-01	W 2, SMALL
#9	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S

PS-LX46/LX46P/LX47P

SERVICE MANUAL



Photo : PS-LX46

US Model
PS-LX47P

AEP Model
PS-LX46/LX46P

UK Model
PS-LX46P/LX47P

E Model
PS-LX47P

Australian Model
PS-LX47P

SPECIFICATIONS

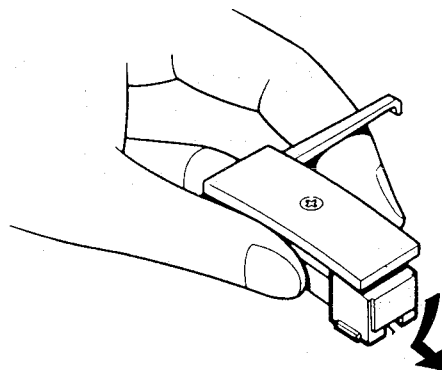
Turntable	
Platter	30cm (12 in.)
Motor	DC servo motor
Drive system	Belt drive
Speed	33 1/3 rpm/45 rpm switchable
Wow and flutter	0.2% (WRMS)
Signal-to-noise ratio	60 dB (DIN-B)
Automatic system	Return, reject
Tonearm	
Type	Dynamically balanced
Pivot-to-stylus length	203 mm (8 in.)
Overall arm length	235 mm (9 1/4 in.)
Cartridge	
Type	Moving magnet type
Frequency response	20 Hz-20kHz
Stylus	ND-155G
General	
Dimensions	355 x 94 x 341 mm (w/h/d) (14 x 3 3/4 x 13 1/2 inches)
Weight	Approx. 2.6 kg (5 lb 12 oz)
Power requirements	220V AC, 50/60 Hz
Power consumption	2 W
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus ND-155G Stat spray XP-C10 Cleaner XP-C1, XP-C2

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

REPLACING THE STYLUS



Replace the stylus after about 400 hours of use because using a worn stylus will damage records. An ND-155G replacement stylus is available at your Sony dealer.

Be sure to turn the amplifier off before proceeding with replacement.

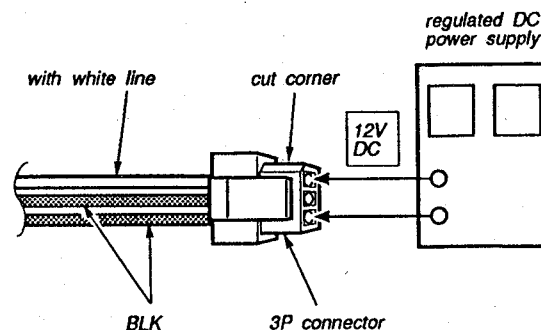
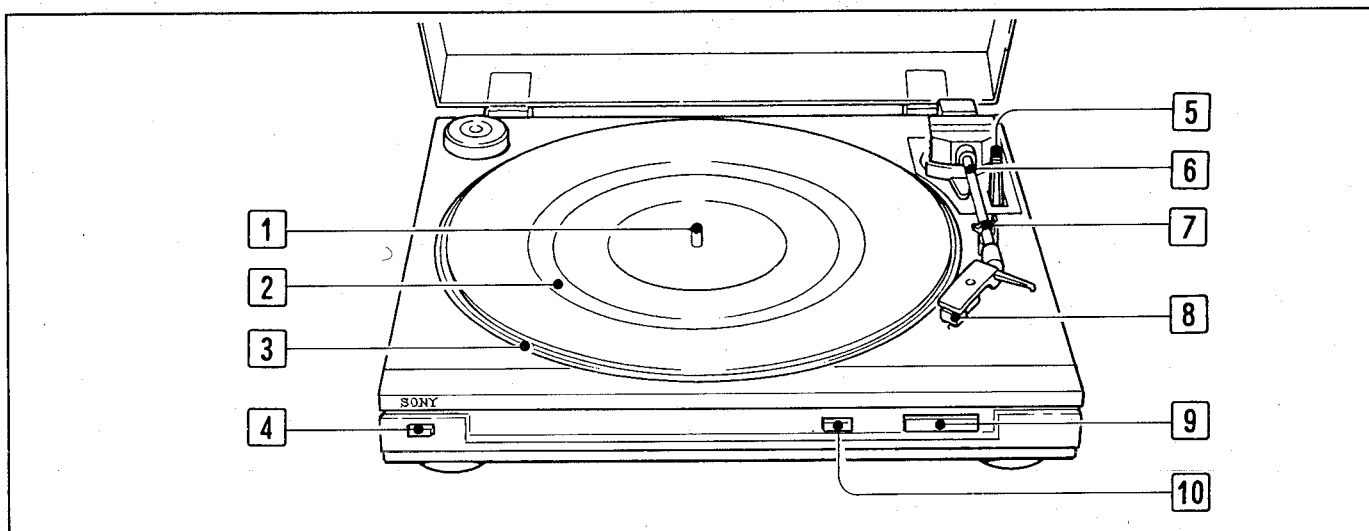
- 1 While holding the cartridge, detach the stylus assembly as illustrated.
- 2 Insert the new stylus into the cartridge.



STEREO TURNTABLE SYSTEM
SONY®

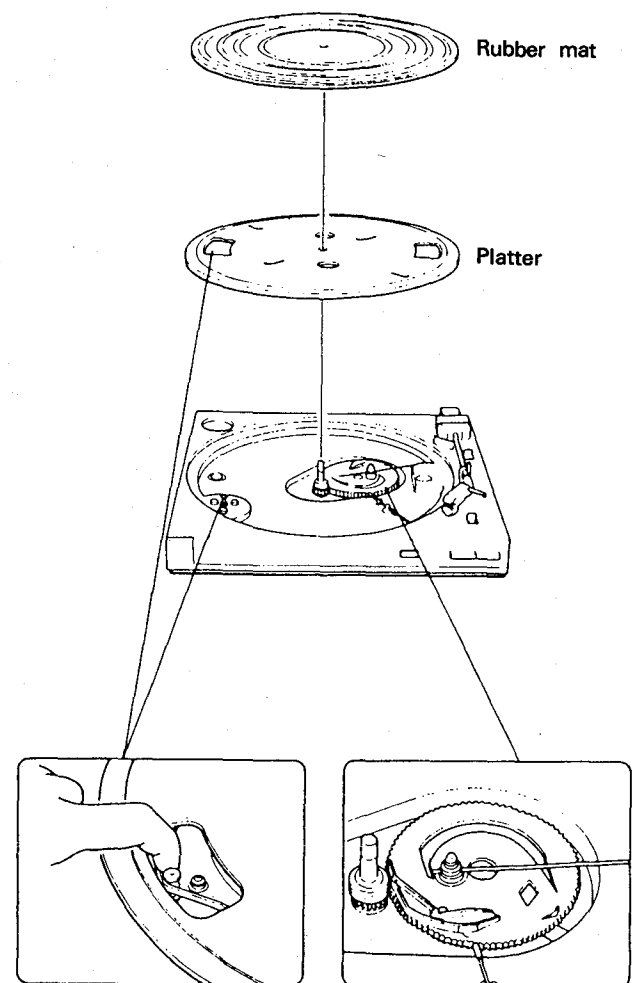
REPAIRING PRECAUTION (PS-LX46P/LX47P only)**[To supply B+ voltage]**

The power of this unit is fed from HST-D201, D301, D301CD or D501CD. Because of this, connect the regulated power supply as illustrated right when this unit alone operates.

**LOCATION AND FUNCTION OF CONTROLS**

- 1 Center spindle
- 2 Rubber mat
- 3 Turntable platter
- 4 POWER switch (PS-LX46 only)
- 5 Cueing lever (▼/▲)
- 6 Tonearm
- 7 Arm rest
- 8 Cartridge
- 9 REJECT button
- 10 SPEED select button
Allows selection of 45rpm or 33rpm turntable speed.

TURNTABLE ASSEMBLY

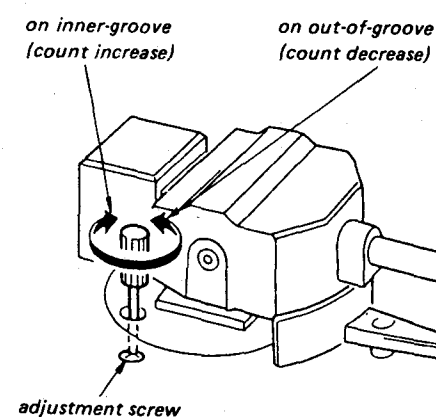


Hook the belt on the motor pulley.
If the belt is removed from the platter, replace it with the glossy side outward.

Stylus Drop-point Adjustment

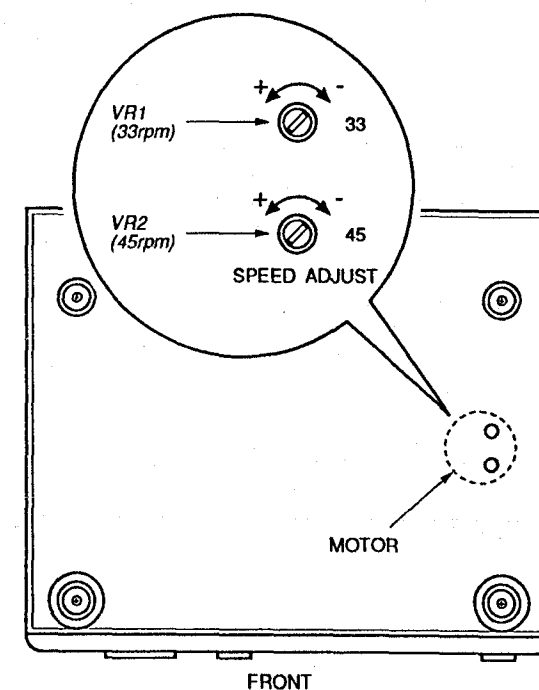
1. Place a test record (YFSC-16) on the turntable sheet.
2. Set the SPEED switch to 33.
3. Press the START button.
4. By using a screwdriver, turn the adjustment screw so that the stylus tip drops on the record at the 7-17 counts position.
5. Move the arm to return detecting groove and confirm that the auto-return operation is started normally.

Note: The proper adjustment for a 30cm record is also correct for a 17cm record.
when turning adjustment screw, put the arm on the arm rest.

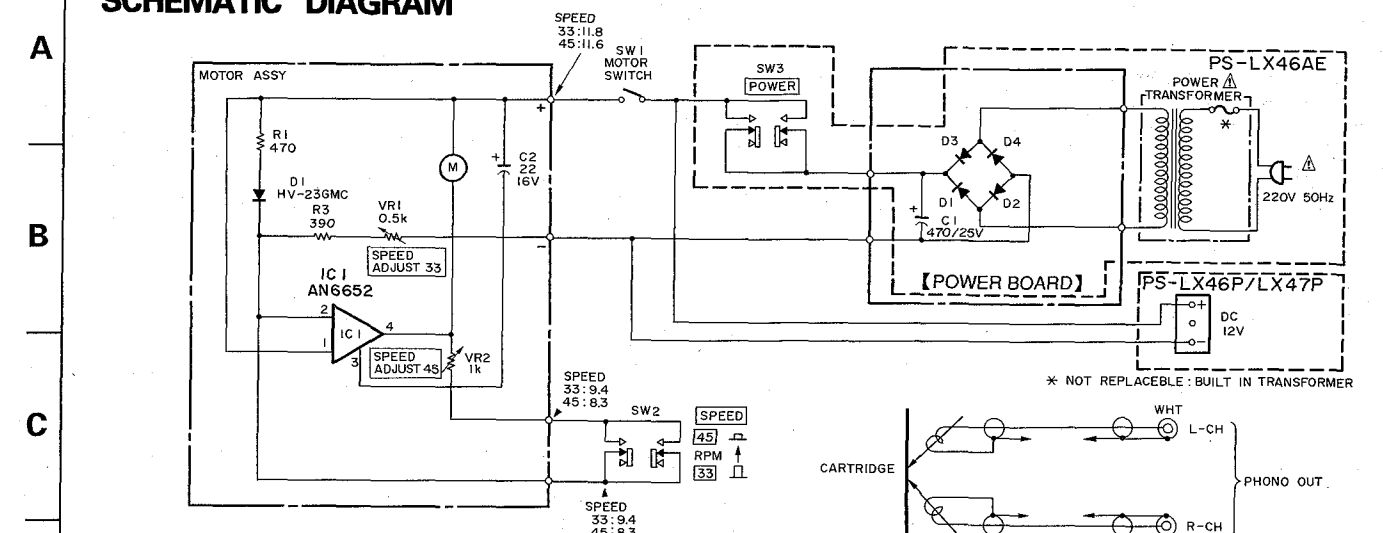


Speed Adjustment

- Note: Be sure to perform 45rpm adjustment before 33rpm.
1. Place a stroboscope board on the turntable sheet.
 2. Set the SPEED switch to 45.
Press the START button.
Adjust VR2 so that the stripped pattern of stroboscope board is stationary.
 3. Set the SPEED switch to 33.
Adjust VR1 in the same way.



SCHEMATIC DIAGRAM



NOTE:

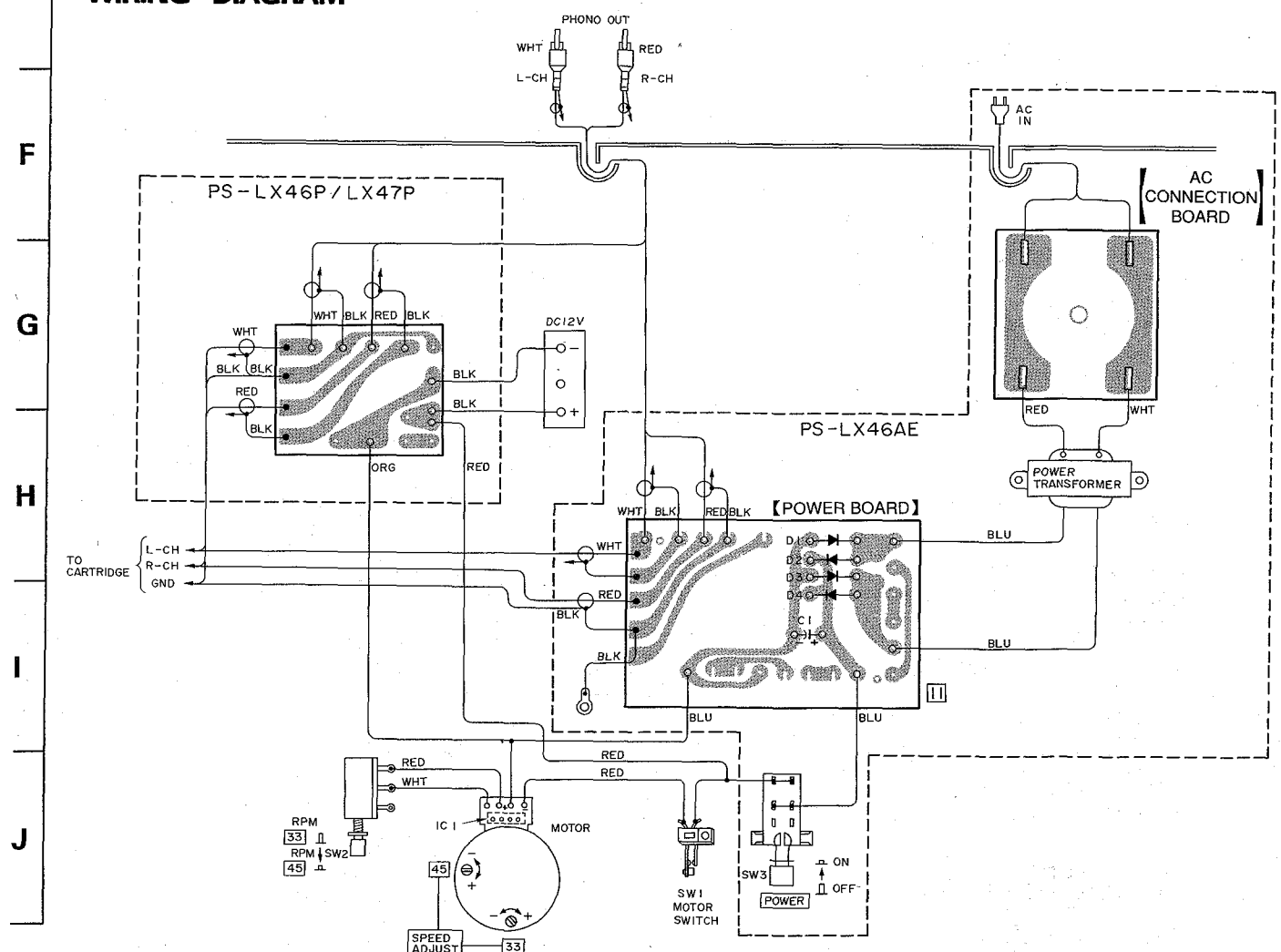
- All capacitors are in μF unless otherwise noted. pF : μF 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.

Switches:

Ref.No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33
SW3	POWER	OFF

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

WIRING DIAGRAM



EXPLODED VIEW

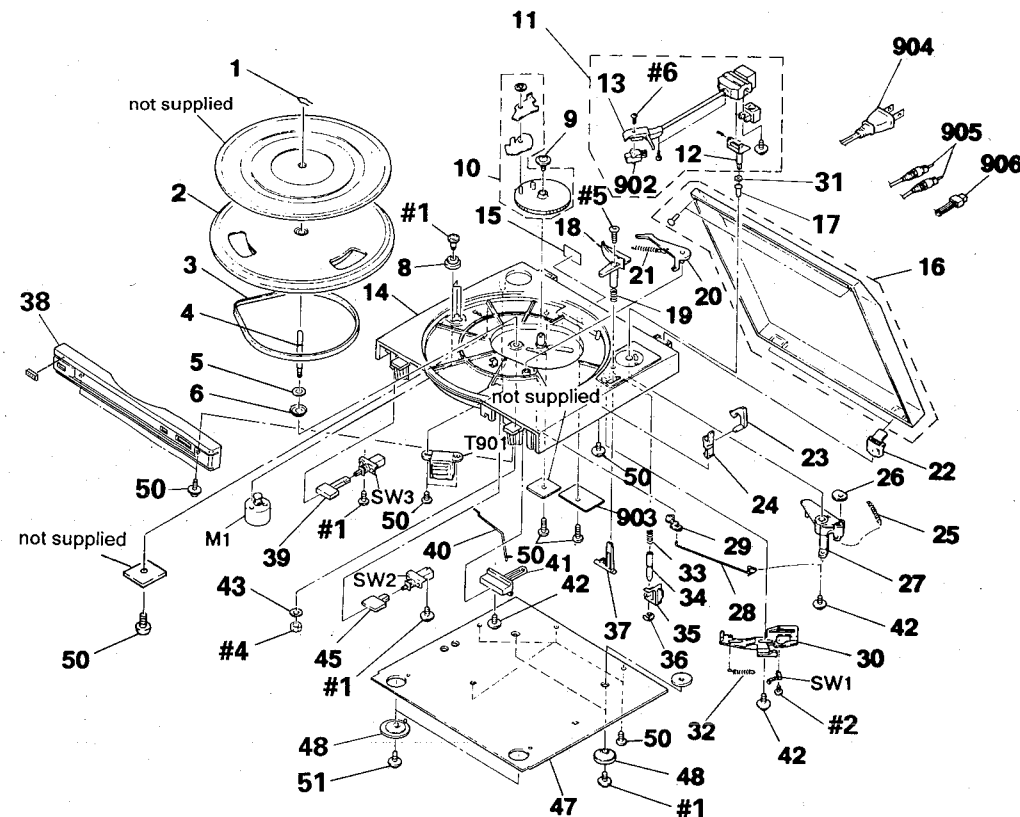
NOTE:

- -XX, -X mean standard parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

- Screw(# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.



Ref. No.	Part No.	Description	Remark
1	4-895-490-01	CLIP, SPINDLE	
2	A-4604-243-A	TURNTABLE ASSY	
3	4-943-396-01	BELT	
4	* 4-896-361-01	SPINDLE	
5	4-895-024-01	POLY WASHER	
6	4-943-399-01	WASHER, FLAT	
8	4-895-414-01	GROMMET (A)	
9	4-896-294-01	SCREW (7-BID 3006 2N3A 10D)	
10	4-895-495-01	GEAR, CAM, CLUTCH	
11	A-4604-242-A	ARM ASSY	
12	4-895-464-01	P. U. HINGE BRACKET	
13	4-896-227-01	SHELL, HEAD	
14	* 4-943-945-01	CABINET, MAIN	
15	4-944-400-01	LABEL, MODEL NUMBER (LX46P)	
15	4-944-402-01	LABEL, MODEL NUMBER (LX47P)	
15	4-944-401-01	LABEL, MODEL NUMBER (AE1/IT1) (LX46)	
16	A-4620-041-A	COVER ASSY, DUST	
17	* 4-896-265-01	SHAFT, P. U.	
18	4-896-258-01	PLATFORM, LIFT	
19	4-896-267-01	SPRING (A)	
20	* 4-896-364-01	LEVER (REJECT)	
21	4-896-365-01	SPRING (C)	
22	4-896-321-01	HINGE ASSY	
23	4-895-418-01	P. U. TUBE HOOK	

Ref. No.	Part No.	Description	Remark
24	4-943-398-01	REST, P. U.	
25	4-895-460-01	ADJUST SPRING	
26	4-895-818-01	CAM, ADJUSTMENT	
27	* 4-896-372-01	LINK, RETURN	
28	4-896-371-01	ROD, TRIP	
29	* 4-896-304-01	LEVER, TRIP	
30	* 4-896-373-01	ARM, SLIDE	
31	3-701-446-01	WASHER	
32	4-896-374-01	SPRING (SLIDE ARM)	
33	4-943-405-01	SPRING, DUMPING	
34	4-896-252-01	SHAFT, ARM LIFT	
35	4-896-253-01	FORK, LIFT	
36	4-896-254-01	RING (DIA. 3), E	
37	4-896-212-01	LEVER, CUE	
38	4-943-948-01	PANEL, FRONT	
39	4-943-949-01	BUTTON (POWER) (LX46)	
40	4-896-367-01	LOT (REJECT)	
41	4-943-944-01	BUTTON (REJECT)	
42	4-896-369-01	SCREW (7-CUP 3008 WF12 ZN3A)	
43	4-943-397-01	WASHER, SPRING	
45	4-943-943-01	BUTTON (SPEED)	
47	* 4-943-946-01	PLATE, BOTTOM	
48	4-895-435-01	FOOT	
50	4-896-375-01	SCREW (7-CUP 3012 WF08 ZN3K)	
51	4-943-406-01	SCREW (7-CUP 3006 WF12 ZN3A)	

ELECTRICAL PARTS LIST

NOTE:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable
- Items marked "*" are not stocked since

they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS
In each case, u: μ , for example :
uA...: μ A..., uPA...: μ PA...,
uPB...: μ PB..., uPC...: μ PC...,
uPD...: μ PD...
- CAPACITORS
MF : μ F, PF : μ F
- COILS
MMH : mH, uH : μ H

Ref. No.	Part No.	Description	Remark
902	1-549-135-11	CARTRIDGE	
903	* 1-638-222-11	PC BOARD, CORD	
904	Δ 1-555-795-00	CORD, POWER (LX46)	
905	1-555-116-11	CORD, CONNECTION	
906	1-557-109-21	CORD, CONNECTION (3 CORE)	
C1	1-123-336-00	ELECT 470uF	25V
D1	8-719-200-02	DIODE 10E2 (LX46)	
D2	8-719-200-02	DIODE 10E2 (LX46)	
D3	8-719-200-02	DIODE 10E2 (LX46)	
D4	8-719-200-02	DIODE 10E2 (LX46)	
M1	A-4604-244-A	MOTOR ASSY	
SW1	1-570-666-11	SWITCH, LEAF	
SW2	1-571-089-11	SWITCH, PUSH (1KEY) (SPEED)	
SW3	1-571-560-11	SWITCH, PUSH (1KEY) (POWER) (LX46)	
T901	Δ 1-449-291-11	TRANSFORMER, POWER (LX46)	

Ref. No.	Part No.	Description	Remark
		ACCESSORY & PACKING MATERIAL	
	3-753-018-11	MANUAL, INSTRUCTION	
	3-753-018-41	MANUAL, INSTRUCTION	
	* 4-896-384-01	CUSHION (RIGHT)	
	* 4-896-385-01	CUSHION (LEFT)	

		SCREW	
#1	7-685-646-79	SCREW (7-CUP 3010 WF12 ZN3A)	
#2	7-685-104-19	SCREW (7-PAN 2006 ZN3A)	
#4	7-684-024-04	NUT 50 ZN3A	
#5	7-621-561-49	SCREW (1-FLAT 2612 ZN3K)	
#6	7-627-553-98	SCREW (7-PAN 2008 ZN3K)	

Sony Corporation
Audio Group

9-956-203-11

- 6 -

Published by Customer Relations and Service Group

English
91A1990-1
Printed in Japan
© 1991.1

CDP-M11/M12/M21/M41

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model



Photo : CDP-M21

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz – 20 kHz $\pm$ 0.5 dB
Signal to noise ratio	More than 100 dB
Dynamic range	More than 97 dB
Harmonic distortion	Less than 0.005%
Channel separation	More than 95 dB

Outputs

LINE OUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
PHONES (for CDP-195)	Output level max. 10 mW
HEADPHONES (for CDP-M11) (stereo phone jack)	Load impedance 32 ohms

General

Power requirements	Model for Continental Europe (CDP-M11,M12,M21) 220-230V AC, 50/60Hz Model for the United Kingdom (CDP-M21,M41) 240V AC, 50/60Hz
Power consumption	12W
Dimensions (approx. , including Projections)	355x95x305 mm (w/h/d) (14x33/4x12 1/8 inches)
Weight (approx.)	3.2kg (7 lbs 1 oz)

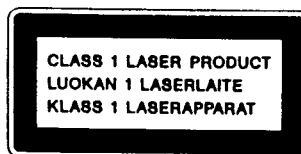
Model Name Using Similar Mechanism	CDP-291/391
CD Mechanism Type	CDM14-5BD1
Optical Pick-Up Block Type	BU-5BD1

Supplied accessories

Audio cord	1 (2 phono plugs – 2 phono plugs)
------------	--------------------------------------

Design and specifications subject to change without notice.

For the United Kingdom and
European countries



This Compact Disc player is
classified as a CLASS 1
LASER product.
The CLASS 1 LASER
PRODUCT label is located
on the rear exterior.

COMPACT DISC PLAYER
SONY®



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

- 1. Laser Diode Properties
 - Material: GaAlAs
 - Wavelength: 780nm
 - Emission Duration: continuous
 - Laser Output: max.44.6 μ W*

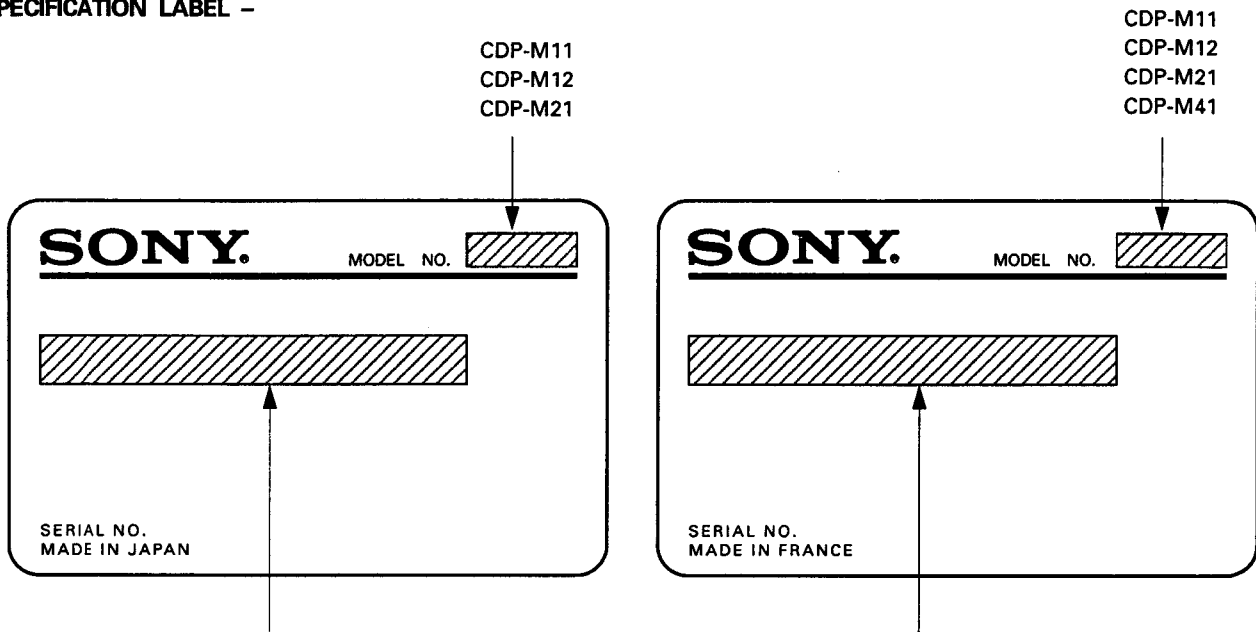
* This output is the value measured at a distance of about 200mm from the objective lens surface on the Optical Pick-up Block.
- 2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

TABLE OF CONTENTS

Section	Title	Page	Section	Title	Page
1. GENERAL		4	4-1. Block Diagrams		10
1-1. Location of Controls		4	4-2. Waveforms		13
1-2 Pin Function		5	4-3. Printed Wiring Boards		14
2. ELECTRICAL BLOCK CHECKING		7	4-4. Schematic diagram		17
3. DISASSEMBLY		9	4-5. Semiconductor Lead Layout		21
4. DIAGRAMS		10	4-6. IC Block Diagrams		22
			5. EXPLODED VIEWS		24
			6. ELECTRICAL PARTS LIST		27

MODEL IDENTIFICATION

- SPECIFICATION LABEL -



AEP MODEL: AC220-230V, 50/60Hz
 Australian MODEL: AC240V, 50/60Hz
 E, Saudi Arabian MODEL: AC110-120, 220-240V, 50/60Hz, 12W

AEP MODEL: AC220-230V, 50/60Hz
 UK MODEL: AC240V, 50/60Hz

SAFETY CHECK-OUT

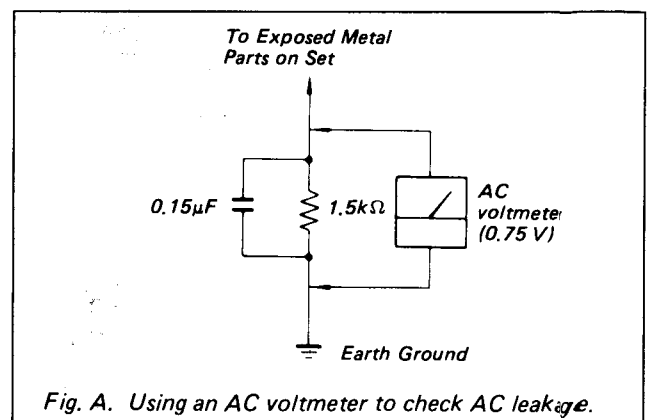
After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limi" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig.A)

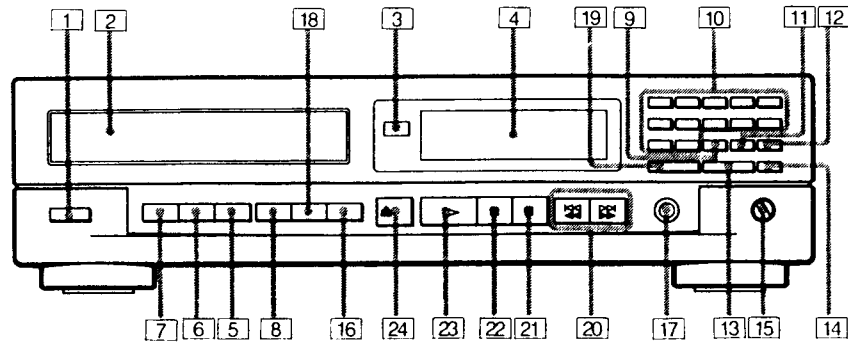


SECTION 1

GENERAL

1-1. LOCATION OF CONTROLS

This section is extracted from instruction manual.



CDP-M11

- [1]** POWER switch
- [2]** Disc tray
- [3]** Remote sensor*
- [4]** Display window
- [5]** PROGRAM button
- [6]** SHUFFLE button
- [7]** CONTINUE button
- [8]** TIME button
- [9]** CHECK (program check) button
- [10]** Numeric buttons
- [11]** CLEAR (program clear) button
- [12]** > 12 (over 12) button
- [13]** MUSIC SCAN button
- [14]** P.SEARCH button
- [15]** PHONE LEVEL control
- [16]** FADER button
- [17]** HEADPHONES jack (**EXCEPT CDP-M12**)
- [18]** REPEAT button
- [19]** EDIT/TIME FADE button
- [20]** ◀◀ ▶▶ ⏮⏭ (AMS**/RMS***/manual search) buttons
- [21]** ■ (stop) button
- [22]** || (pause) button
- [23]** ► (play) button
- [24]** ▲ (open/close) button

1-2. PIN FUNCTION OF IC101 AND IC401

● IC101 (CXA1372Q) PIN FUNCTION

Pin No.	Pin Name	I / O	Description
1	VC	—	GND when two ($\pm$) dual power supplies are in use, or the center voltage (2.5V) when a single power supply is in use.
2	FGD	I	Time constants for gain switching in normal mode/down mode and for focus gain are connected between the FGD and FS3 pins.
3	FS3	I	
4	FLB	I	The capacitor for low frequency boost in the focus servo loop is connected.
5	FEO	O	Focus drive output.
6	FE—	I	Inverted input to focus amplifier.
7	SRCH	I	Time constants to generate the focus search waveform are connected.
8	TGU	I	Time constants for gain switching in normal mode/up mode and for tracking gain are connected between TGU pin and TG2 pin.
9	TG2	I	
10	AVCC	—	Analog power supply (5V when $\pm$ dual power supplies are in use, 5V when a single power supply is in use.)
11	TAO	O	Tracking drive output.
12	TA—	I	Inverted input to tracking amplifier.
13	SL+	I	Non-inverted input to sled amplifier.
14	SLO	O	Sled drive output.
15	SL—	I	Non-inverted input to sled amplifier.
16	ESET	I	The 610k Ω phase compensator resistor is connected to this pin.
17	ISET	I	The current setting resistor is connected to this pin.
18	SSTOP	I	The limit switch is connected to this pin.
19	AVEE	—	Analog power supply ($-5V$ when $\pm$ dual power supplies are in use, or GND when a single power supply is in use.)
20	DIRC	I	Direct control pin.
21	LOCK	I	Sled run-away prevention circuit operates when this signal is "L".
22	CLK	I	Serial data transfer clock input that is supplied from CPU (or DSP).
23	XLT	I	Latch input from CPU (or DSP).
24	DATA	I	Serial data input from CPU (or DSP).
25	XRST	I	System reset. "L" to reset.
26	C.OUT	O	Output to tracking counter.
27	SENS	O	SENS output.
28	DGND	—	Digital ground (GND). (GND when $\pm$ dual power supplies are in use. GND when a single power supply is in use.)
29	MIRR	O	Mirror output.
30	DFCT	O	Defect output. "H" when defective.
31	ASY	I	Auto-assymmetry control input.
32	EFM	O	EFM comparator output.
33	FOK	O	Focus OK.
34	CC2	I	Defect-bottom-hold input (input by capacitive coupling).
35	CC1	O	Defect-bottom-hold output.
36	DVCC	—	Digital power supply. (+5V when $\pm$ dual power supplies in use. +5V when a single power supply is in use.)
37	CB	I	The defect-bottom-hold capacitor is connected to this pin.
38	CP	I	The mirror hold capacitor is connected to this pin.
39	RF1	I	RF signal input (input by capacitive coupling).
40	RF0	I	RF signal input (input by DC coupling).
41	DVEE	—	Digital power supply ($-5V$ when $\pm$ dual power supplies are in use. GND when a single power supply is in use.)
42	TZC	I	Tracking zero-cross comparator input.
43	TE	I	Tracking error input.
44	TDFCT	I	The defect prevention hold capacitor is connected to this pin.
45	ATSC	I	Anti-shock input.
46	FZC	I	Focus zero-cross comparator input.
47	FE	I	Focus error input.
48	FDFCT	I	The defect prevention hold capacitor is connected to this pin.

• IC401 (CXP50112-097Q) PIN FUNCTION

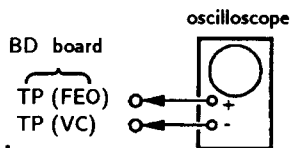
Pin No.	Pin Name	I / O	Description
1 - 4	—	—	Not used (open).
5 - 20	S1 -S16	O	Segment output to FL tube.
21 - 28	1G - 8G	O	Common output to FL tube.
29	SCOR	I	Subcode sync signal S0 + S1 detection input from IC301 (CXD2500AQ).
30	—	—	Not used (open).
31	+5V	—	+5V
32	RST	I	Reset input.
33	+5V	—	+5V
34	VDD	—	Power voltage terminal (+5V).
35 - 40	KEY0 - KEY5	I	Key A/D input.
41	—	—	Not used (Ground).
42	TIMER SW	I	Auto play select input (Auto play "L").
43	—	—	Not used (Ground).
44	CLK	O	Serial data transfer clock output to IC301 (CXD2500AQ).
45	DATA	O	Serial data output to IC301 (CXD2500AQ).
46	—	—	Not used (Ground).
47	FOK	I	Focus OK signal input from IC101 (CXA1372Q).
48	GFS	I	Frame sync signal clock status input from IC301 (CXD2500AQ).
49	SUBQ	I	Sub code (Q data) serial input from IC301 (CXD2500AQ).
50	SQCLK	O	Sub code (Q data) readout clock output to IC301 (CXD2500AQ).
51	XLT	O	Serial data latch output.
52	PRGL	O	Attenuate data latch clock output to IC302 (CXD2554P).
53	LDON	O	Laser diode ON/OFF select output of optical pick-up.
54	AMUT	O	Muting output for IC301 (CXD2500AQ) and Q344 (2SC3399). Muting on by "H", Muting off by "L".
55 - 58	B0 - B3	—	Not used (+5V)
59	DEFECT SW	O	Defect circuit ON/OFF select output to IC101 (CXA1372Q).
60	—	—	Not used (open).
61	SENSE	I	SENS signal input from IC301 (CXD2500AQ).
62	RMC	I	Remote control signal input.
63	INSW	I	Input for loading out switch.
64	OUTSW	I	Output for loading in switch.
65	ADJ	I	Tset mode input. GFS check will not activate by "L".
66	AFADJ	I	Test mode input. All test operation will be activate by "L" mode when power on.
67	LODIN	O	Output for turn the loading motor to loading.
68	LODOUT	O	Output for turn the loading motor to un loading.
69	LED	O	Output for motor volume LED lighting.
70	—	—	Not used (open).
71	Vss	—	Ground.
72	XTAL	O	Clock output.
73	+5V	—	+5V
74	EXTAL	I	Clock input. (4MHz)
75	+5V	—	+5V
76	—30V	I	Power voltage —30V for built in FL tube controller.
77	—	O	Not used (open).
78	—	O	Not used (open).
79	VDL DOWN	O	Output for motor volume down. (This set is not used).
80	VOL UP	O	Output for motor volume up. (This set is not used).

SECTION 2

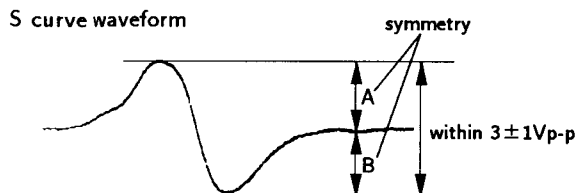
ELECTRICAL BLOCK CHECKING

Note :

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than $10M\Omega$ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check**Procedure :**

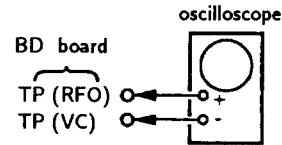
1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3 \pm 1V_{p-p}$.



5. After check, remove the lead wire connected in step 2.

Note :

- Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

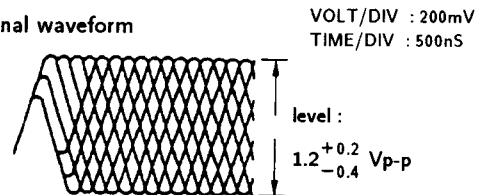
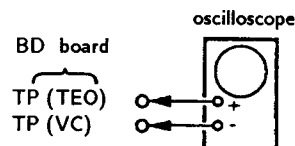
RF Level Check**Procedure :**

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

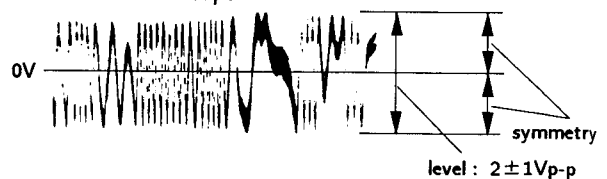
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform

**E-F Balance Check****Procedure :**

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

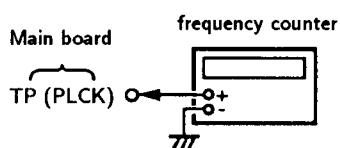


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is
4. 3218MHz.

Focus/Tracking Gain

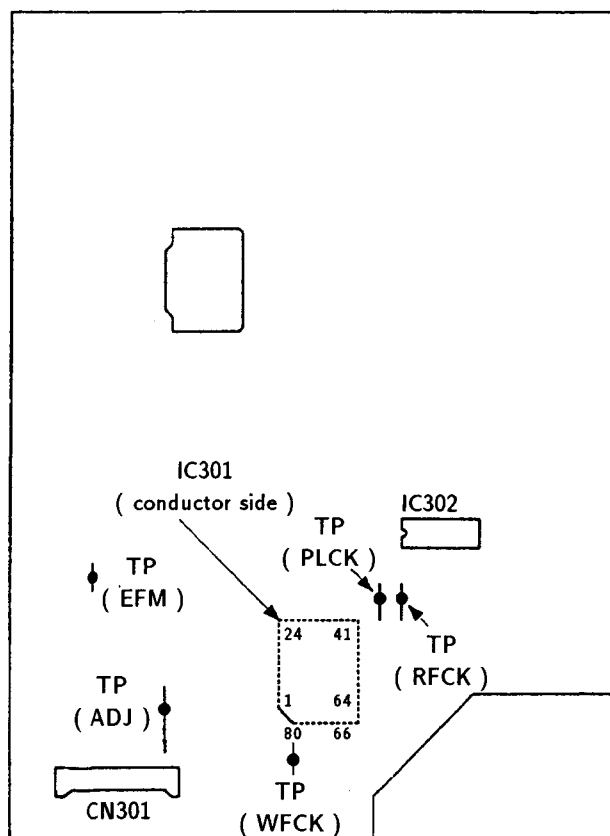
This gain has a margin, so even if it is slightly off. There is no problem.

Therefore, do not perform, this adjustment.

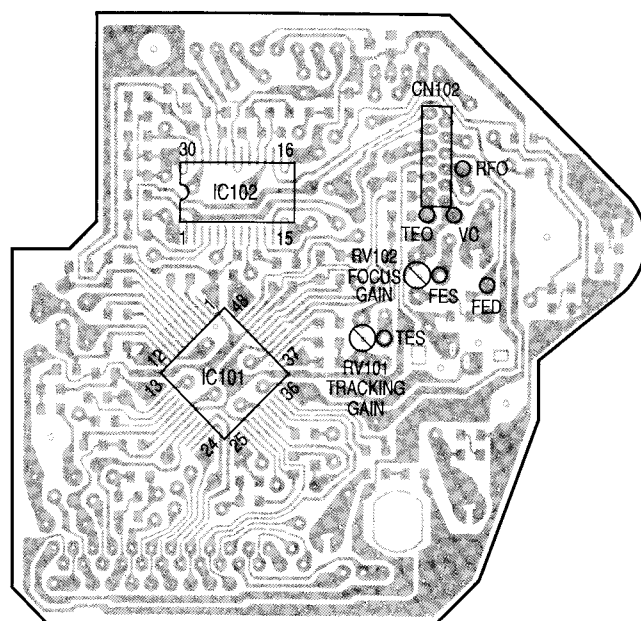
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location ;

【MAIN BOARD】 – Component Side –



[BD BOARD] – Component Side –

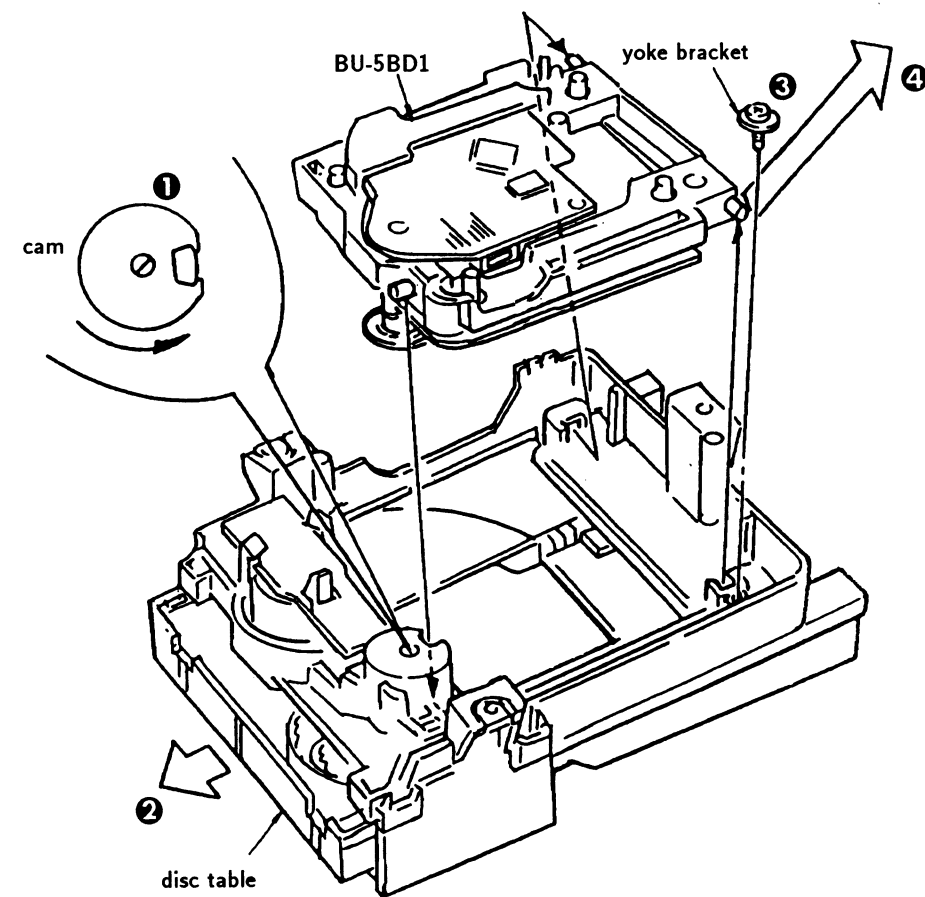


SECTION 3 DISASSEMBLY OF BASEUNIT

Note :

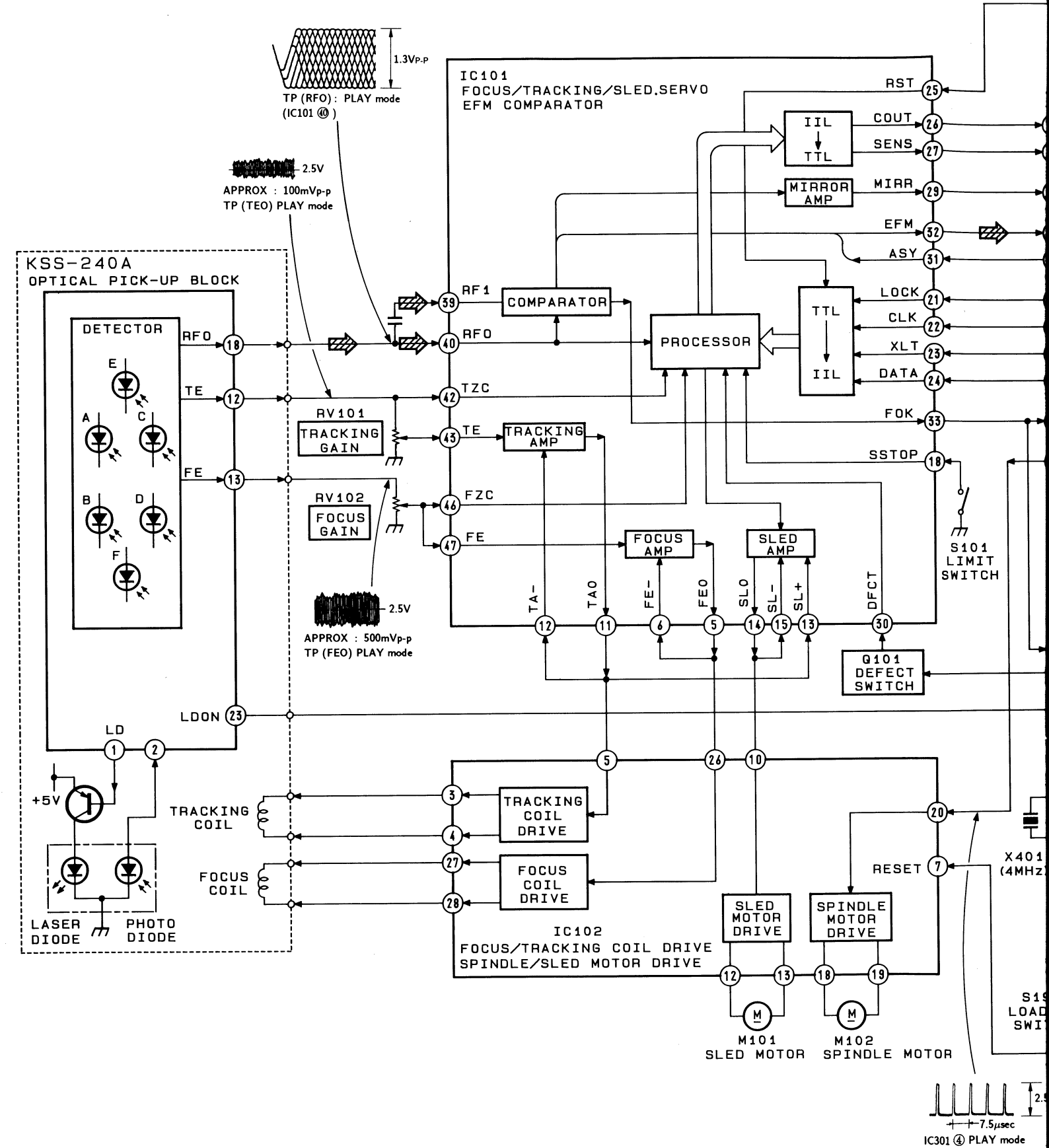
Follow the disassembly procedure in the numerical order given.

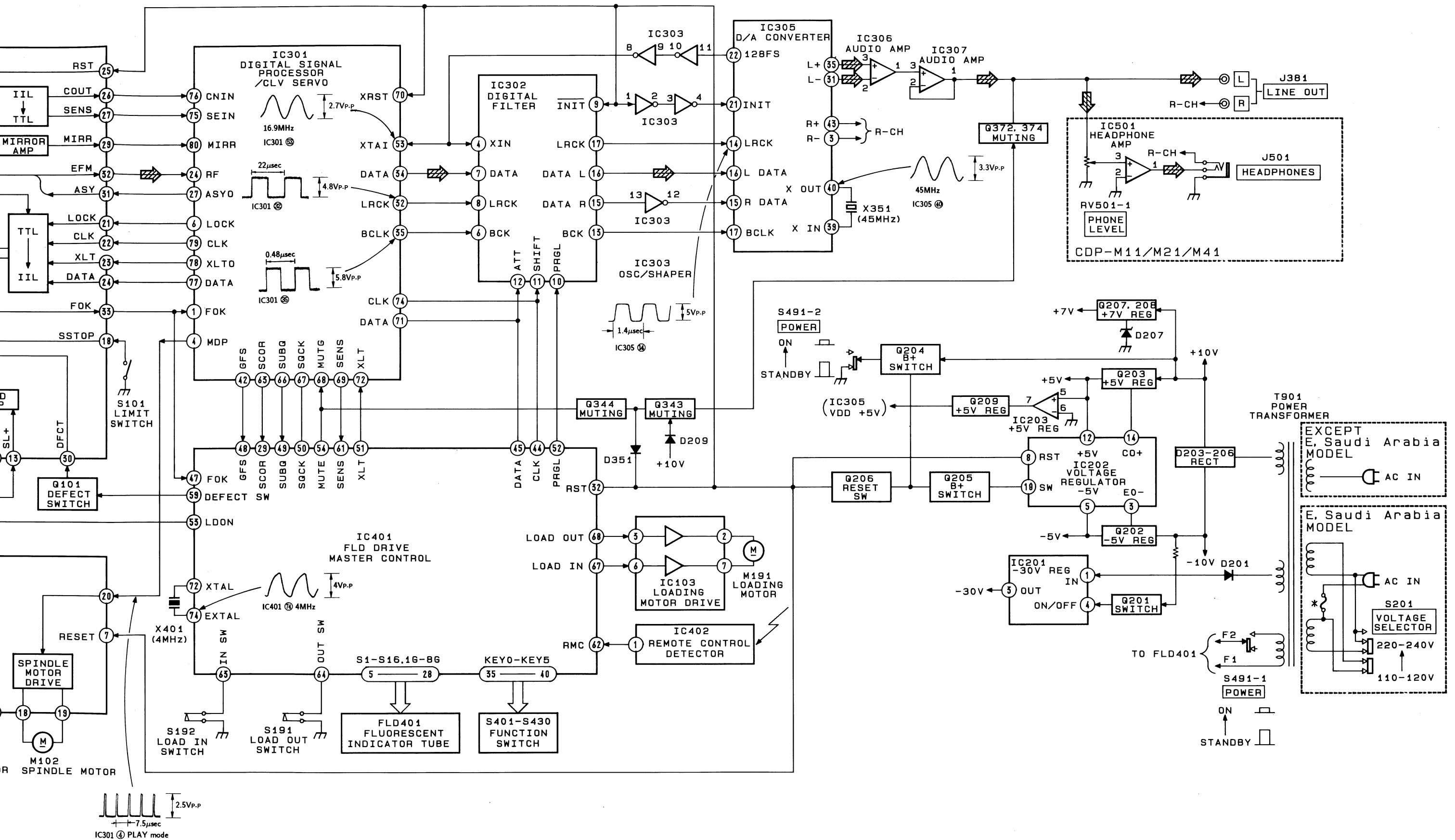
- ① Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.
- ② Take off the disc table.
- ③ Remove the yoke bracket.
- ④ Remove the MD (BU-5BD1) to the direction of arrow.



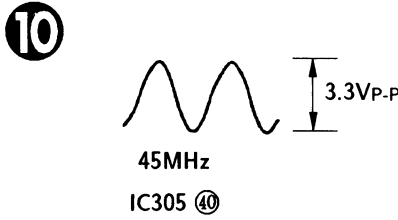
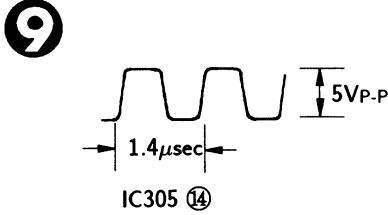
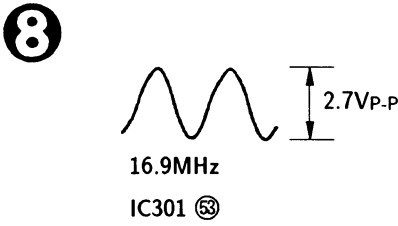
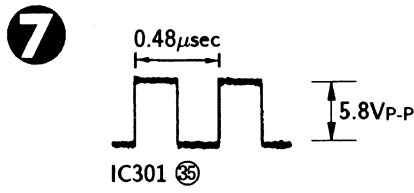
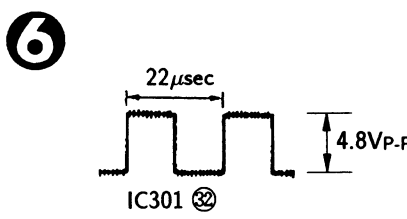
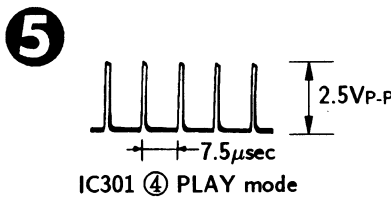
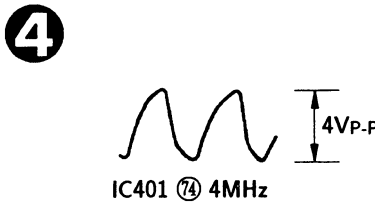
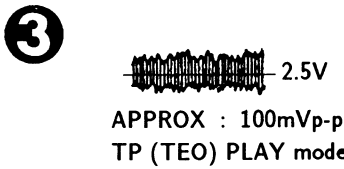
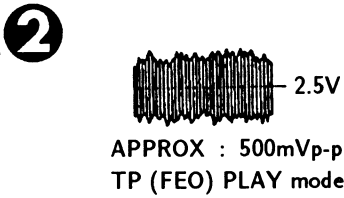
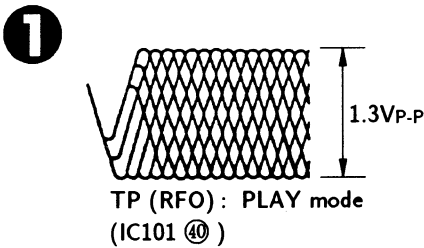
SECTION 4 DIAGRAMS

4-1. BLOCK DIAGRAM





4-2. WAVEFORMS



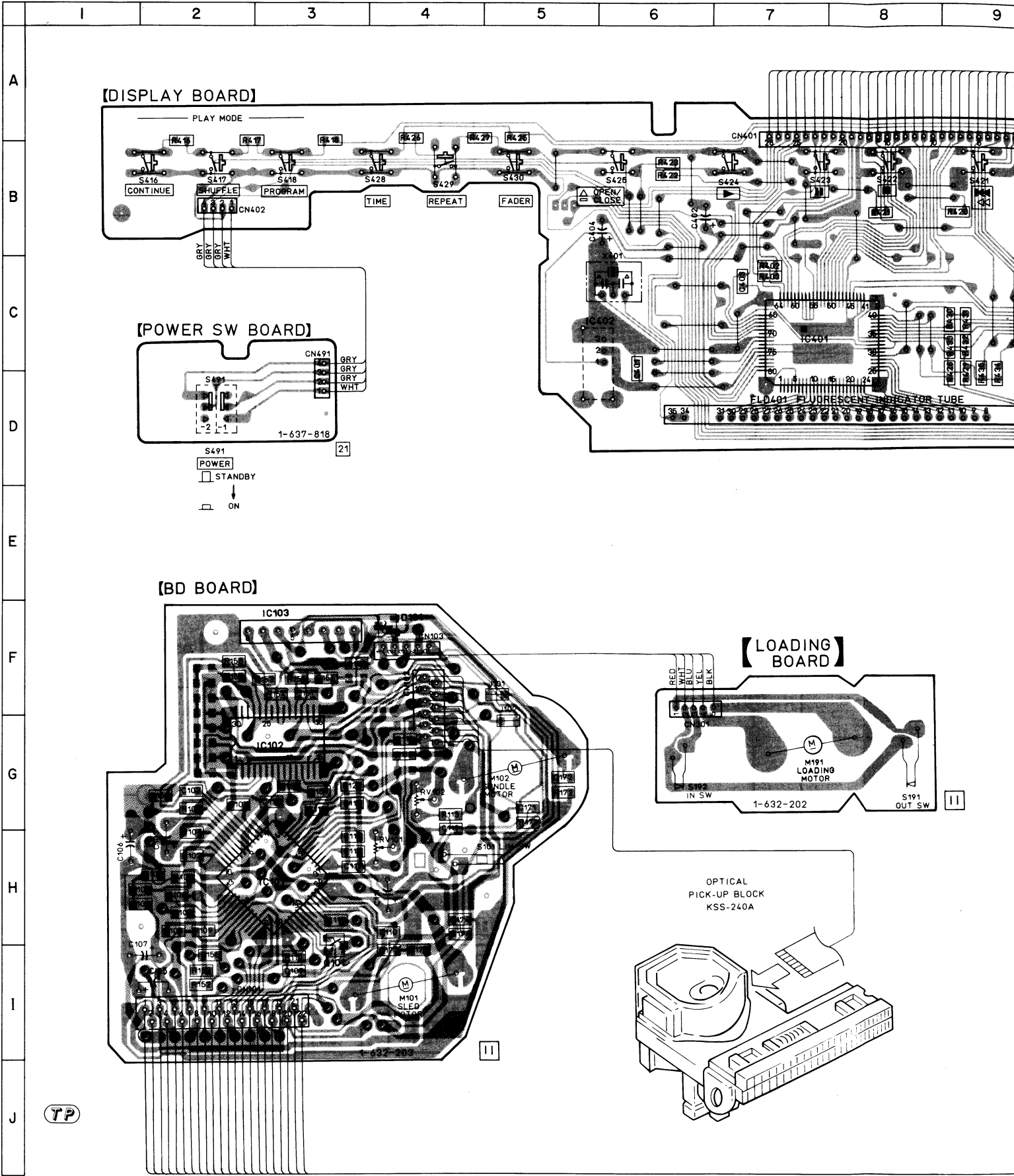
• SEMICONDUCTOR LOCATION

Ref. No.	LOCATION No.	Ref. No.	LOCATION No.
D101	F-4	IC306	C-16
D201	E-20	IC307	C-16
D202	I-20	IC401	C-7
D203	E-19	IC402	C-6
D204	E-19	IC501	H-11
D205	E-19		
D206	E-19	Q101	I-3
D207	G-20	Q201	F-20
D208	F-18	Q202	G-19
D209	F-18	Q203	F-19
D341	F-17	Q204	H-19
D351	G-15	Q205	H-19
		Q206	H-19
IC101	H-3	Q207	G-20
IC102	G-3	Q208	F-20
IC103	F-3	Q209	F-17
IC201	F-20	Q343	D-15
IC202	G-19	Q344	G-14
IC203	G-17	Q371	B-16
IC301	H-17	Q372	C-17
IC302	G-16	Q373	B-16
IC303	F-15	Q374	C-17
IC305	F-16		

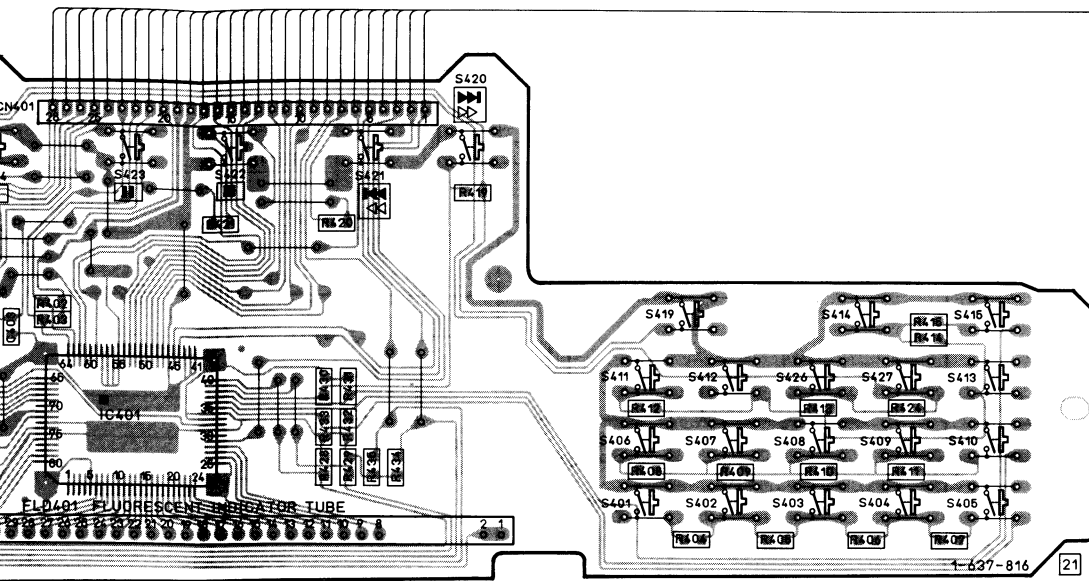
- Note:
- : indicated a lead wire mounted on the component side.
 - : indicated a lead wire mounted on the conductor side.
 - : Through hole.
 - : Pattern from the side which enables seeing.
 - : Pattern of the rear side.

"Semiconductor Lead Layouts" is inserted on P21.

4-3. PRINTED WIRING BOARDS

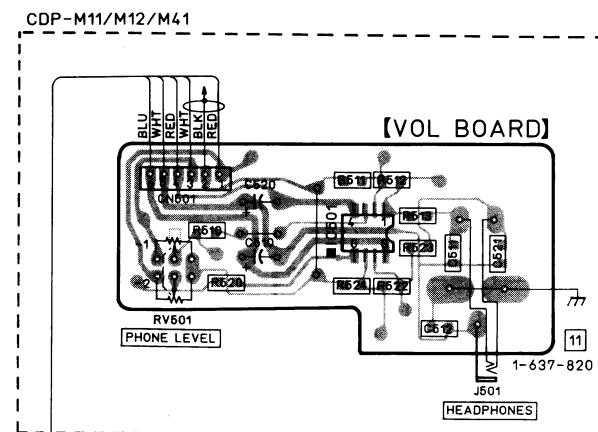
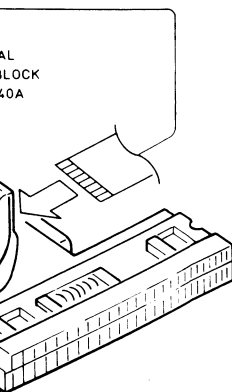
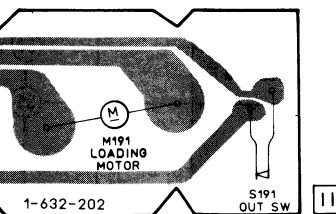


7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

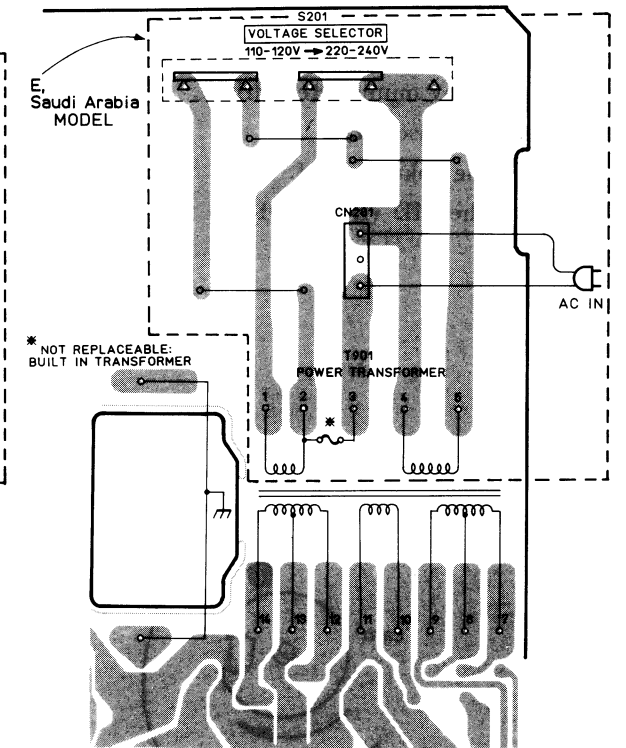
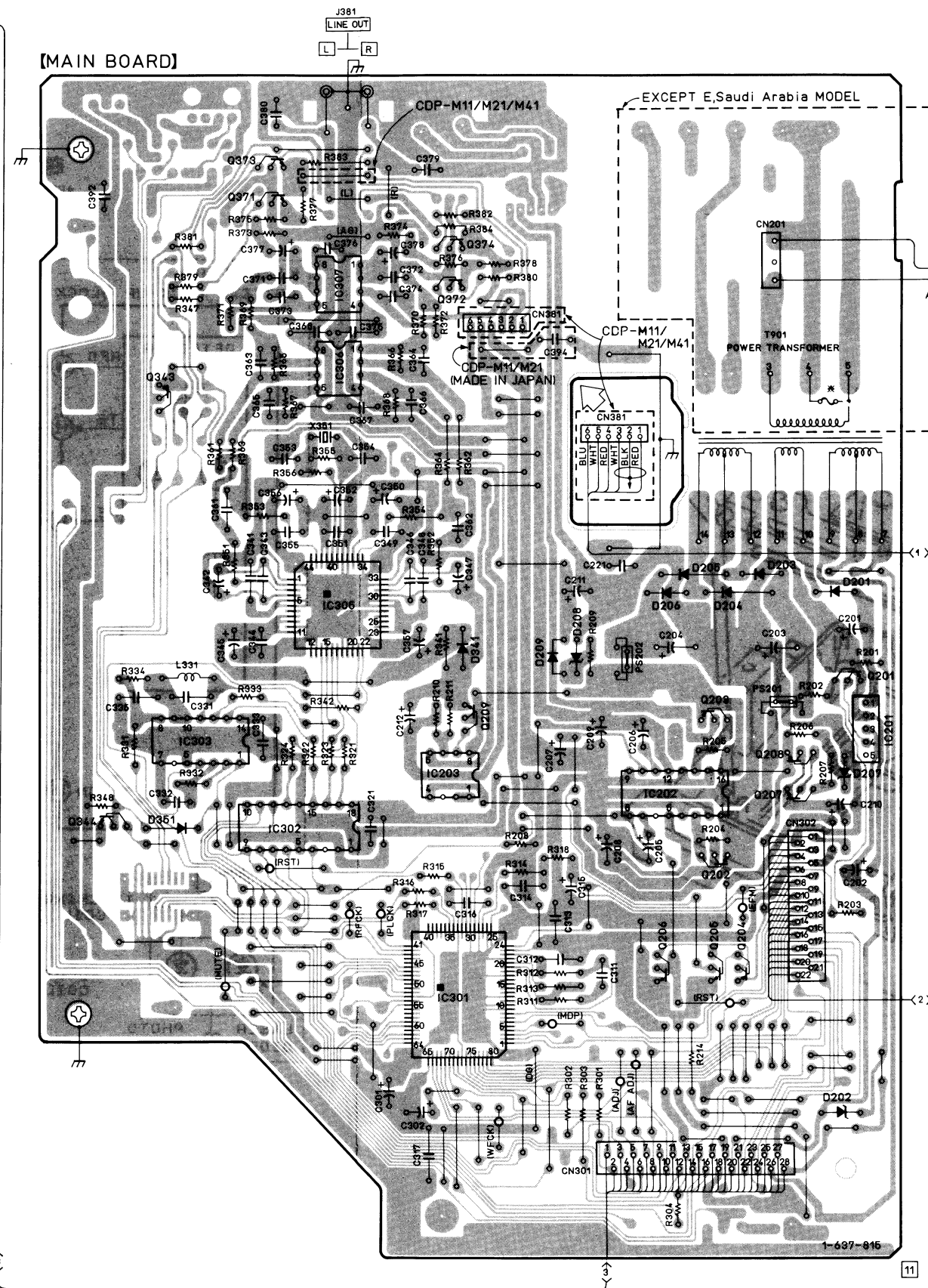


S419	S414	S415
EDIT/TIME FADE	MUSIC SCAN	P-SEARCH
S411	S412	S426
11	12	CHECK
S406	S407	S427
6	7	CLEAR
S401	S402	S403
1	2	3
S404	S405	S413
4	5	> 12

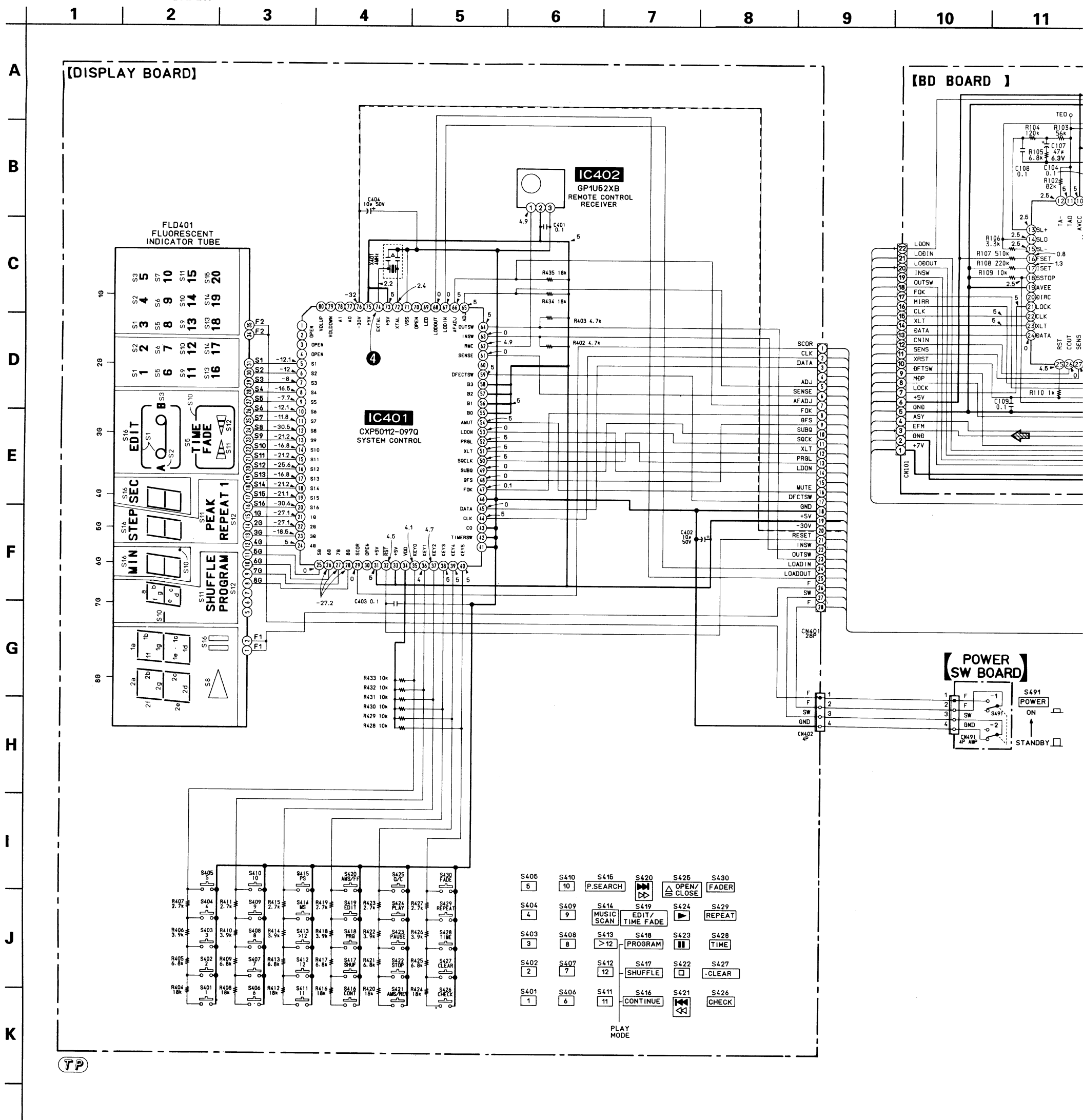
LOADING BOARD



[MAIN BOARD]



4-4. SCHEMATIC DIAGRAM

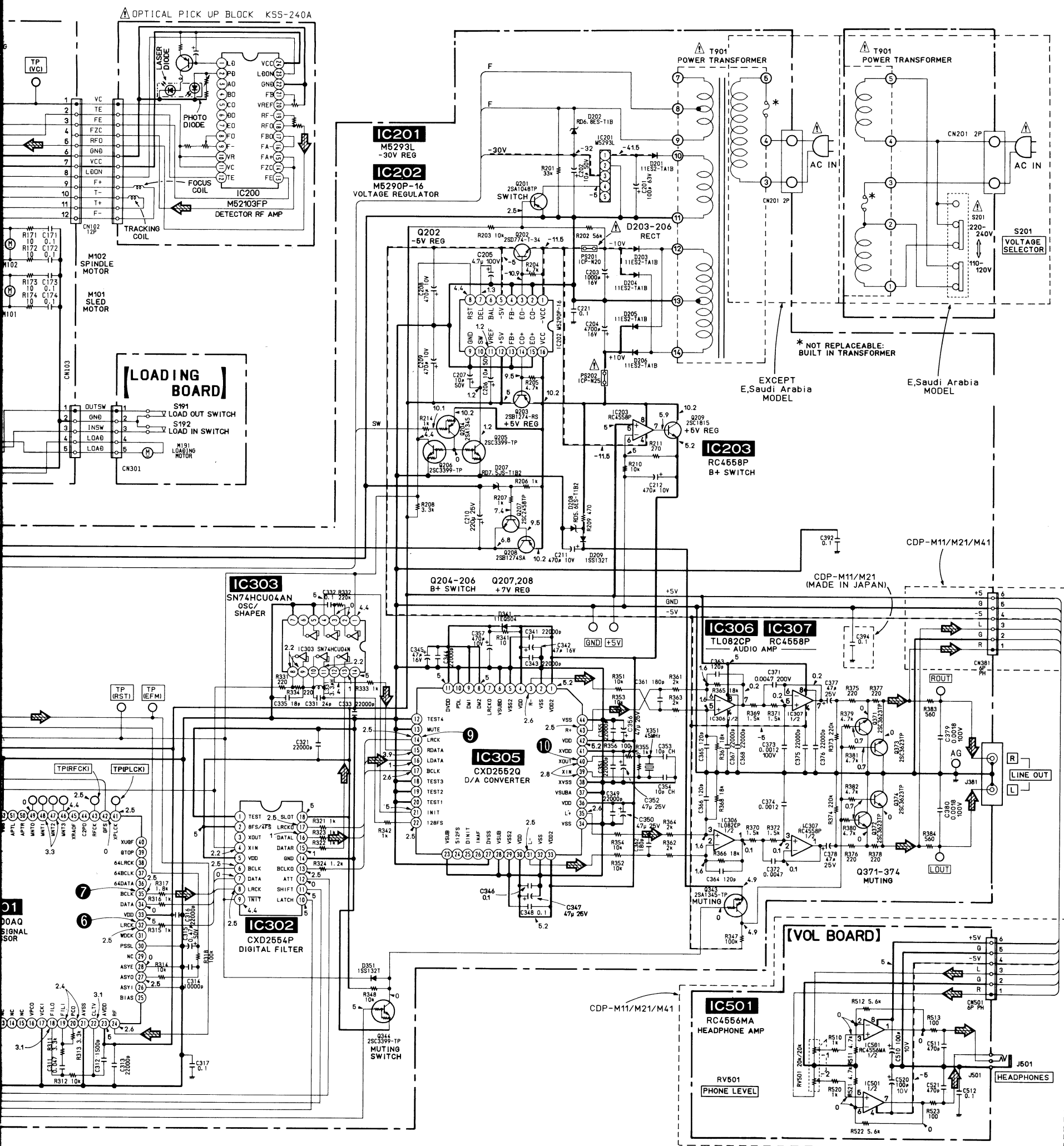


capacitors are in μF unless otherwise noted. pF: μF 50WV
less are not indicated except for electrolytics and tantalums.
resistors are in ohms, 1/4W or less unless otherwise noted.
: internal component.

components identified by mark Δ or
d line with mark Δ are critical for
ty.
ace only with part number specified.

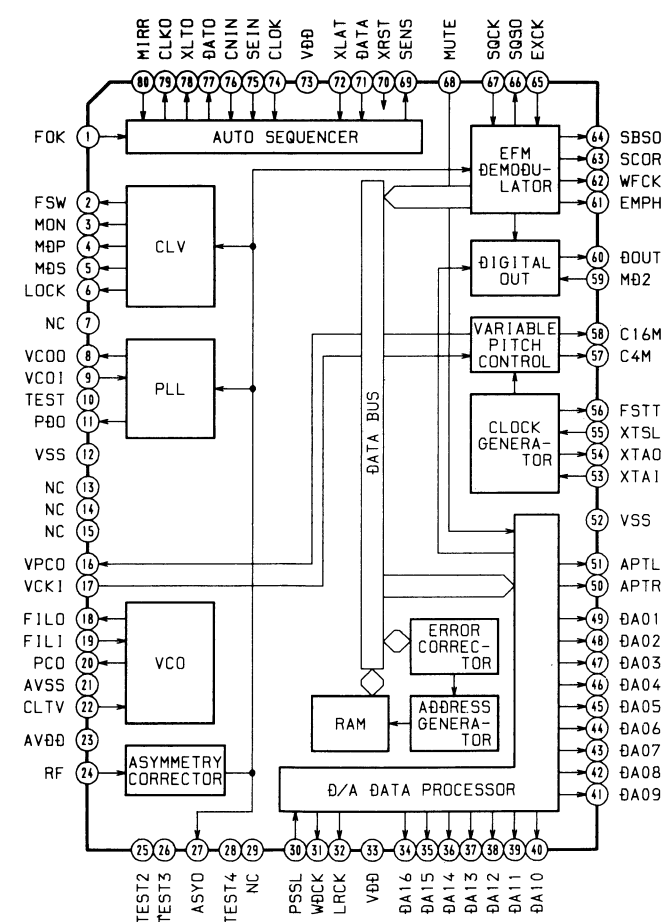
- : B+ Line.
- : B- Line.
- $\square$: adjustment for repair.
- Voltages are DC between measurement points and ground under no-signal (STOP) conditions.
- no mark : PB mode
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path
- Δ : CD

17 18 19 20 21 22 23 24 25 26 27



4-6. IC BLOCK DIAGRAMS

4-6. IC BLOCK DIAGRAMS



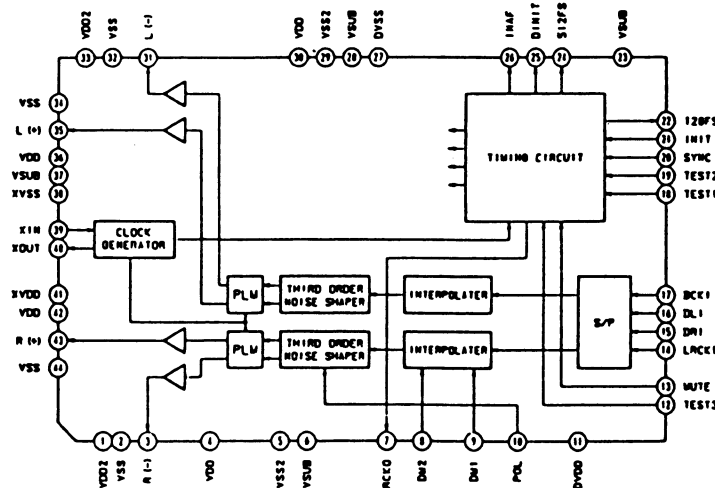
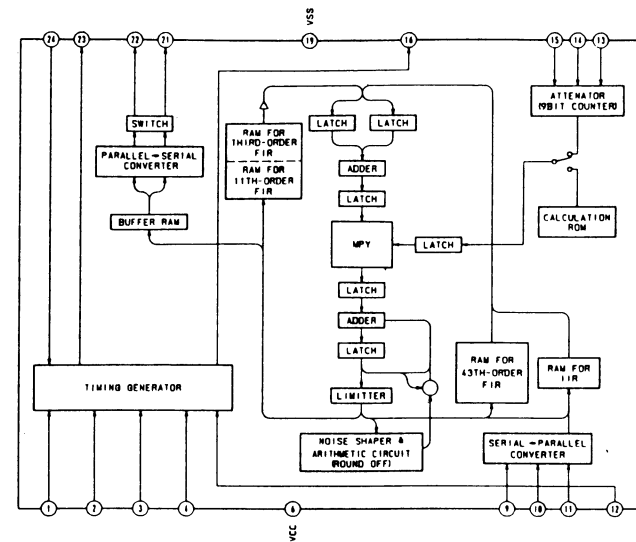
EXPLODED VIEW

The diagram illustrates the internal architecture of the AD574. Key components and connections include:

- Power and Reference:** -VCC and VCC supply rails. A VOLT REF pin is connected to a reference voltage source.
- Current Limiting and Protection:** Two CURRENT LIMITER blocks and an OVERCURRENT PROTECT block are shown, managing the current through the DAC and output stages.
- Output Stages:** The DAC output is connected to a collector-emitter output stage, providing both negative (COLLECTOR OUT (-), EMITTER OUT (-)) and positive (COLLECTOR OUT (+), EMITTER OUT (+)) signals.
- Feedback and Control:** FB (-) and FB (+) pins provide feedback signals. An OUT pin is also present. A BALANCE FB input is used for calibration. A DELAY CAPACITY input is connected to a DELAY block, which in turn controls the ON/OFF CONTROL block.
- Reset and Shutdown:** A RESET pin is connected to the ON/OFF CONTROL block. The ON/OFF CONTROL block manages the shutdown of the device, with an ON/OFF pin output.

The diagram illustrates the internal architecture of the TDA1147, a monolithic IC for FM stereo reception. The central component is the **DATA BUS**, which connects various functional blocks:

- Input Section (Pins 1-15):** Includes **FOK** (1), **FSW** (2), **MON** (3), **MBP** (4), **MBS** (5), **DOCK** (6), **NC** (7), **COO** (8), **CO1** (9), **EST** (10), **PBO** (11), **VSS** (12), **NC** (13), **NC** (14), and **NC** (15).
- Processing Blocks:**
 - AUTO SEQUENCER** (Pins 68-89): Receives control signals like **MIRR**, **CLKO**, **XLTO**, **DATA**, **CNIN**, **SEIN**, **CLOCK**, **VBB**, **XLAT**, **DATA**, **XRST**, **SENS**, **MUTE**, **SQCK**, **SOGO**, and **EXCK**.
 - CLV** (Pins 16-21): Connected to **FSW**, **MON**, **MBP**, **MBS**, and **DOCK**.
 - PLL** (Pins 22-27): Connected to **COO**, **CO1**, **EST**, **PBO**, **VSS**, and **NC**.
 - VCO** (Pins 28-33): Connected to **PLL**, **VSS**, **LTV**, and **VBB**.
 - ASYMMETRY CORRECTOR** (Pins 34-39): Connected to **RF** and **VBB**.
 - ERROR CORRECTOR** (Pins 40-45): Connected to the **DATA BUS** and **RAM**.
 - ADDRESS GENERATOR** (Pins 46-51): Connected to the **DATA BUS** and **RAM**.
 - RAM** (Pins 52-57): Connected to the **DATA BUS**, **ERROR CORRECTOR**, and **ADDRESS GENERATOR**.
 - CLOCK GENERATOR** (Pins 58-63): Connected to the **DATA BUS** and **VARIABLE PITCH CONTROL**.
 - VARIABLE PITCH CONTROL** (Pins 64-69): Connected to the **CLOCK GENERATOR** and **DIGITAL OUT**.
 - DIGITAL OUT** (Pins 70-75): Connected to the **VARIABLE PITCH CONTROL** and **EFM DEMODULATOR**.
 - EFM DEMODULATOR** (Pins 76-81): Connected to the **DIGITAL OUT** and **AUTO SEQUENCER**.
- Output Section (Pins 82-91):** Includes **SBSO** (82), **SCOR** (83), **WFK** (84), **EMPH** (85), **DOUT** (86), **MD2** (87), **C16M** (88), **C4M** (89), **FSTT** (90), **XTSL** (91), **XTAO** (92), **XTAI** (93), **VSS** (94), **APTL** (95), **APTR** (96), **DA01** (97), **DA02** (98), **DA03** (99), **DA04** (100), **DA05** (101), **DA06** (102), **DA07** (103), **DA08** (104), and **DA09** (105).

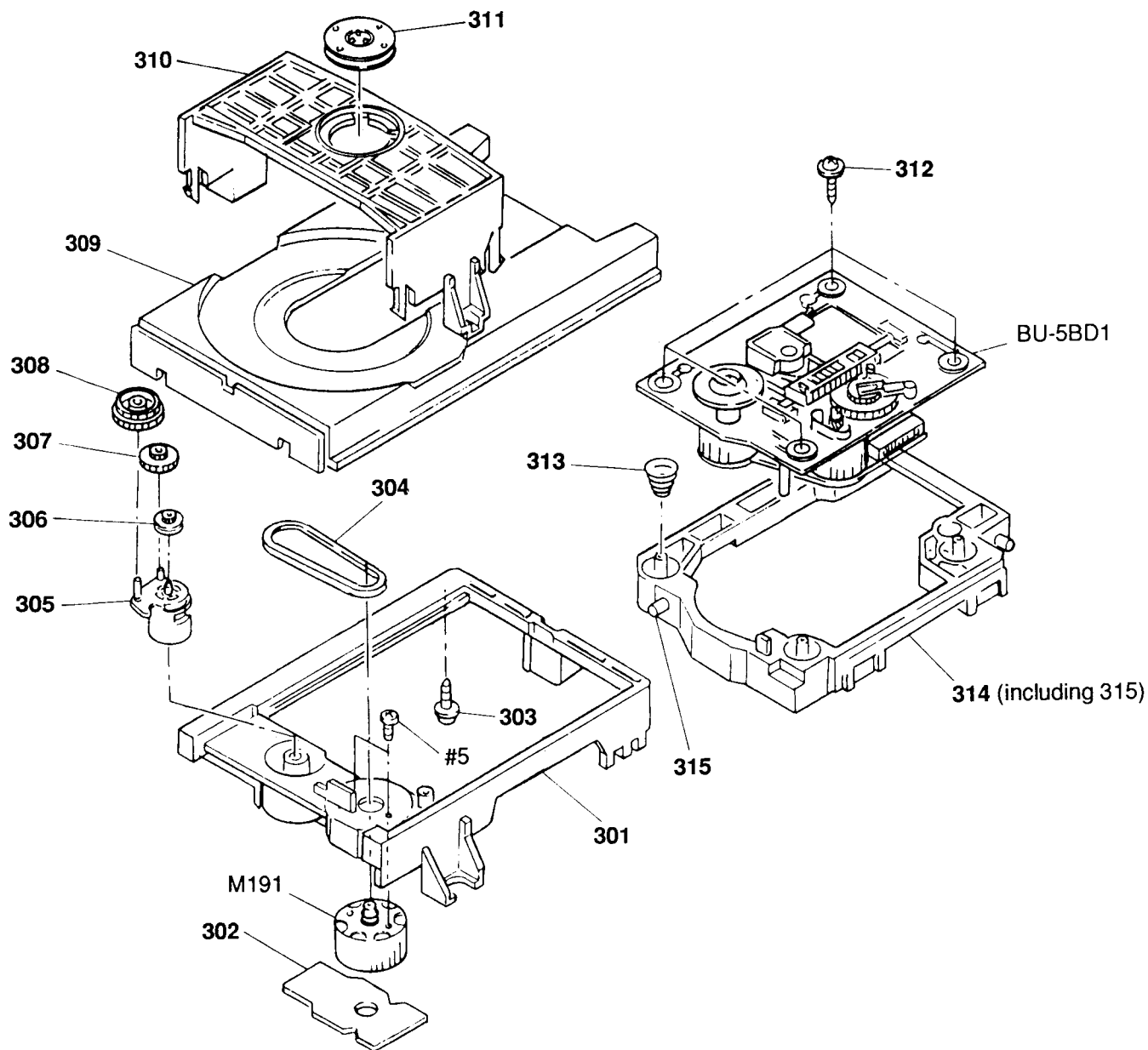


- 24 -

Ref. No.	Part No.	Description	Remark
1	4-942-977-01	PLATE, INDICATION (M21:AEP/M41:UK)	
1	4-942-977-11	PLATE, INDICATION (M11:AEP/M12:AEP, UK)	
1	4-942-983-01	PLATE, INDICATION (M21:E, Australian)	
1	4-942-983-11	PLATE, INDICATION (M11:E, Australian, Saudi Arabia)	
2	X-4941-318-1	PANEL ASSY, FRONT (M21:AEP)	
2	X-4941-319-1	PANEL ASSY, FRONT (M11:AEP)	
2	X-4941-320-1	PANEL ASSY, FRONT (M12:AEP, UK)	
2	X-4941-325-1	PANEL ASSY, FRONT (M21:E, Australian)	
2	X-4941-327-1	PANEL ASSY, FRONT (M11:E, Australian, Saudi Arabia)	
2	X-4941-455-1	PANEL ASSY, FRONT (M41:UK)	
2	X-4941-557-1	PANEL ASSY, FRONT (GRAY) (M11:AEP)	
3	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
4	4-922-531-01	KNOB (A TYPE), LOV (M11/M21/M41)	
5	4-927-341-01	BUTTON (POWER)	
6	* 4-923-103-01	HOLDER, FL TUBE	
8	4-942-979-11	PANEL, LOADING (M21:AEP/M41:UK)	
8	4-942-979-21	PANEL, LOADING (M11:AEP)	
8	4-942-979-31	PANEL, LOADING (GRAY) (M11:AEP/M12:AEP, UK)	
8	4-942-979-51	PANEL, LOADING (M21:E, Australian)	
8	4-942-979-61	PANEL, LOADING (M11:E, Australian, Saudi Arabia)	
9	3-704-366-01	SCREW (CASE) (M3X8)	
10	4-919-376-31	CASE (MADE IN JAPAN M11/M21)	
10	4-919-376-51	CASE (MADE IN FRANCE M11/M12:AEP/M41:UK)	
10	4-919-376-61	CASE (MADE IN FRANCE M12:AEP, UK)	
10	4-919-376-81	CASE (MADE IN JAPAN M12:AEP)	
11	△ 1-574-127-31	CORD, POWER (MADE IN FRANCE M11/M12/M21:AEP)	
11	△ 1-574-358-31	CORD, POWER (WITH CONNECTOR) (M11/M21:Australian)	
11	△ 1-574-390-31	CORD, POWER (M12/M41:UK)	
11	△ 1-575-651-21	CORD, POWER (MADE IN JAPAN M11/M12/M21:AEP/M11:Saudi Arabia)	
11	△ 1-575-653-21	CORD, POWER (M11/M21:E)	
12	△ 1-569-007-11	ADAPTOR, CONVERSION 2P (M11/M21:E)	
12	△ 1-569-008-11	ADAPTOR, CONVERSION 2P (M11:Saudi Arabia)	
14	* 3-703-244-00	BUSHING (2104), CORD	
15	2-383-566-01	SCREW +PTWH 3X8 S TIGHT (Saudi Arabia)	
15	4-886-821-11	SCREW, S TIGHT, +PTWH 3X6 (EXCEPT Saudi Arabia)	

Ref. No.	Part No.	Description	Remark
16	* 4-941-467-11	PANEL, BACK (MADE IN FRANCE M12:UK)	
16	* 4-941-467-21	PANEL (ALSACE), BACK (MADE IN FRANCE)	
16	* 4-942-980-31	PANEL, BACK (MADE IN JAPAN M21:AEP)	
16	* 4-942-980-61	PANEL, BACK (M21:E)	
16	* 4-942-981-01	PANEL, BACK (MADE IN JAPAN M11:AEP)	
16	* 4-942-981-11	PANEL, BACK (M11:Australian)	
16	* 4-942-981-31	PANEL, BACK (M11:E, Saudi Arabia)	
16	* 4-942-981-41	PANEL, BACK (M21:Australian)	
17	* A-4617-692-A	MAIN BOARD, COMPLETE (MADE IN FRANCE)	
17	* A-4617-706-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M11/M21:AEP, Australian)	
17	* A-4617-708-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M11:E, Saudi Arabia/M21:E)	
17	* A-4617-771-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M12:AEP)	
18	4-902-345-01	HEAT SINK	
19	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
21	* 4-924-098-31	HOLDER, PC BOARD (EXCEPT M12:AEP)	
21	* 4-924-098-41	HOLDER, PC BOARD (M12:AEP)	
22	* 3-349-025-41	HOLDER, PC BOARD	
23	4-933-601-01	FOOT	
24	* A-4617-690-A	DISP BOARD, COMPLETE (MADE IN FRANCE)	
24	* A-4617-770-A	DISP BOARD, COMPLETE (MADE IN JAPAN M12:AEP)	
24	* A-4617-777-A	DISP BOARD, COMPLETE (MADE IN JAPAN M11/M21)	
25	* 1-637-818-11	POWER SW BOARD (MADE IN JAPAN)	
25	* 1-637-818-21	POWER SW BOARD (MADE IN FRANCE)	
26	* 1-637-820-11	VOL BOARD (MADE IN FRANCE EXCEPT M12)	
26	* 1-637-820-21	VOL BOARD (MADE IN JAPAN EXCEPT M12)	
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
FLD401	1-519-611-11	INDICATOR TUBE, FLUORESCENT	
T901	△ 1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN M11/M21:AEP, Australian/M12:AEP)	
T901	△ 1-449-923-11	TRANSFORMER, POWER (MADE IN JAPAN M11:E, Saudi Arabia/M21:E)	
T901	△ 1-449-925-11	TRANSFORMER, POWER (MADE IN FRANCE AEP, UK)	

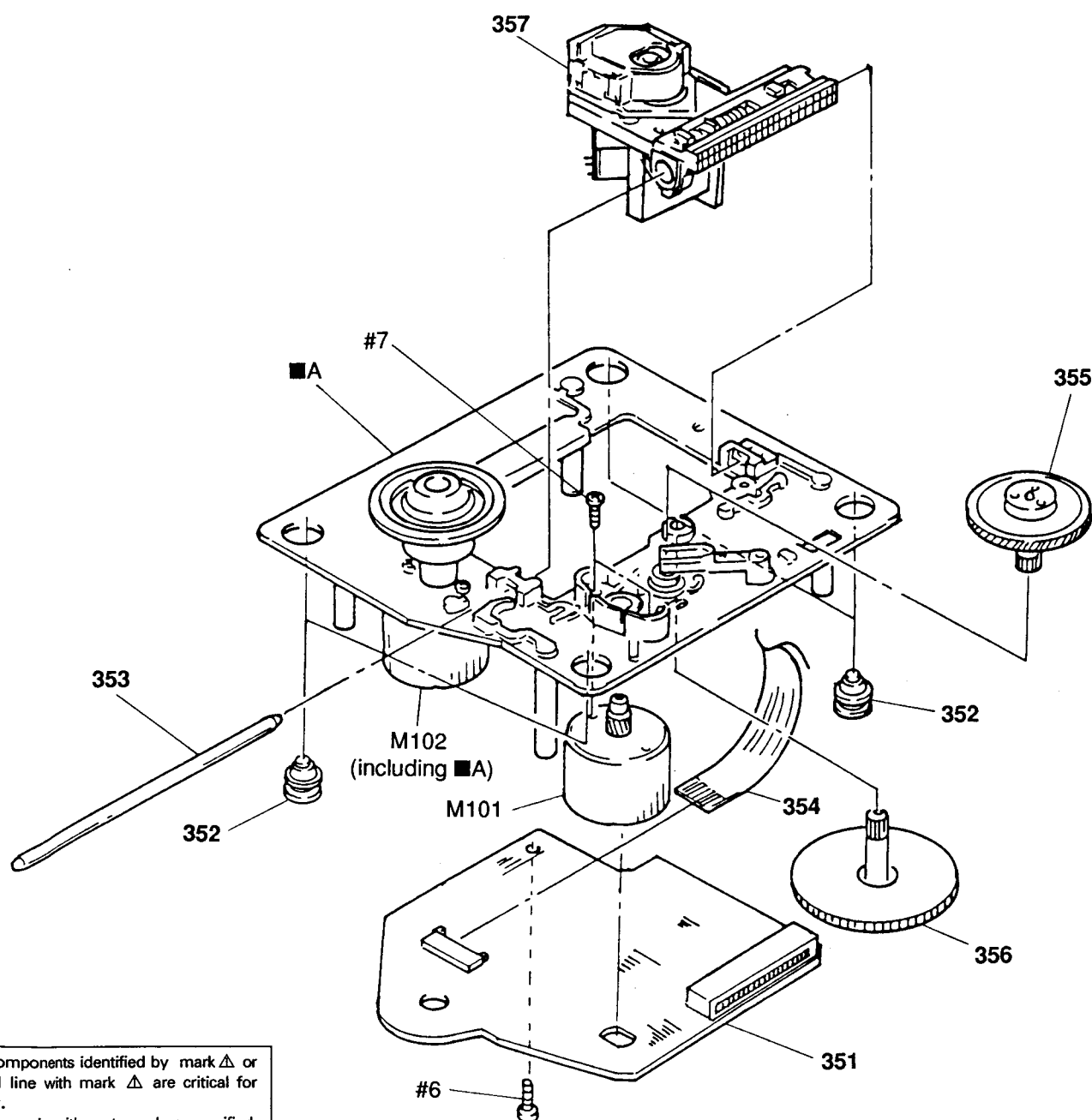
(2) MD SECTION (CDM14-5BD1)



Ref. No.	Part No.	Description	Remark
301	4-933-111-01	CHASSIS (MD)	
302	* 1-632-202-11	LOADING BOARD	
303	* 4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	

Ref. No.	Part No.	Description	Remark
309	4-933-112-01	TABLE, DISK	
310	4-933-110-01	HOLDER (MG)	
311	* 1-452-538-11	MAGNET	
312	4-933-134-01	SCREW (+PTPWH M2. 6X6)	
313	4-917-541-01	SPRING (B)	
314	4-933-129-01	HOLDER (BU)	
315	4-933-108-01	SHAFT (CAM)	
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

(3) PICK-UP BLOCK (BU-5BD1)



The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
351	A-4617-161-A	BD BOARD, COMPLETE	
352	4-933-126-01	INSULATOR (A)	
353	4-917-565-01	SHAFT, SLED	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
355	4-917-567-01	GEAR (M)	
356	4-917-564-01	GEAR (P), FLATNESS	
357 Δ	8-848-144-11	DEVICE, OPTICAL KSS-240A	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	

BD

SECTION 6

ELECTRICAL PARTS LIST

NOTE:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA...,
uPB...: μ PB..., uPC...: μ PC...,
uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Hardware(# mark) list is given in the last of this parts list.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-4617-161-A	BD BOARD, COMPLETE *****				< CONNECTOR >	
		< CAPACITOR >		CN101	1-568-796-11	SOCKET, CONNECTOR 22P	
C101	1-163-038-00	CERAMIC CHIP 0.1uF	25V	CN102	1-568-795-11	SOCKET, CONNECTOR 12P	
C102	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V	CN103	* 1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P	
C103	1-126-163-11	ELECT 0.68uF	20% 50V			< DIODE >	
C104	1-163-038-00	CERAMIC CHIP 0.1uF	25V	D101	8-719-105-72	DIODE RD4.7M-B1	
C105	1-126-154-11	ELECT 47uF	20% 6.3V			< IC >	
C106	1-126-154-11	ELECT 47uF	20% 6.3V	IC101	8-752-050-82	IC SC CXA1372Q	
C107	1-126-154-11	ELECT 47uF	20% 6.3V	IC102	8-759-822-36	IC LA6532M	
C108	1-163-038-00	CERAMIC CHIP 0.1uF	25V	IC103	8-759-633-65	IC M54641L	
C109	1-163-038-00	CERAMIC CHIP 0.1uF	25V			< JACK >	
C110	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V	J101	1-216-295-00	METAL CHIP 0 5% 1/10W	
C111	1-131-367-00	TANTALUM 22uF	10% 20V	J102	1-216-295-00	METAL CHIP 0 5% 1/10W	
C112	1-164-232-11	CERAMIC CHIP 0.01uF	50V			< TRANSISTOR >	
C113	1-164-232-11	CERAMIC CHIP 0.01uF	50V	Q101	8-729-901-01	TRANSISTOR DTC144EK	
C114	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V			< RESISTOR >	
C115	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V	R101	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C117	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R102	1-216-095-00	METAL CHIP 82K 5% 1/10W	
C118	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R103	1-216-091-00	METAL CHIP 56K 5% 1/10W	
C119	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V	R104	1-216-099-00	METAL CHIP 120K 5% 1/10W	
C120	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V	R105	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
C151	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V	R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C152	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
C153	1-163-006-11	CERAMIC CHIP 560PF	10% 50V	R108	1-216-105-00	METAL CHIP 220K 5% 1/10W	
C154	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V	R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C155	1-163-023-00	CERAMIC CHIP 0.015uF	5% 50V	R110	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C171	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C172	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C173	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C174	1-163-038-00	CERAMIC CHIP 0.1uF	25V				

BD

DISP

Ref. No.	Part No.	Description	Remark
R111	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R112	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R113	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R114	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R152	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R153	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R154	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R155	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R156	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R157	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R158	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R159	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R160	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R171	1-216-001-00	METAL CHIP 10 5% 1/10W	
R172	1-216-001-00	METAL CHIP 10 5% 1/10W	
R173	1-216-001-00	METAL CHIP 10 5% 1/10W	
R174	1-216-001-00	METAL CHIP 10 5% 1/10W	
< VARIABLE RESISTOR >			
RV101	1-238-016-11	RES. ADJ. CARBON 10K (TRACKING GAIN)	
RV102	1-238-016-11	RES. ADJ. CARBON 10K (FOCUS GAIN)	
< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)	

* A-4617-690-A DISP BOARD, COMPLETE (MADE IN FRANCE)			
* A-4617-770-A DISP BOARD, COMPLETE (MADE IN JAPAN M12:AEP)			
* A-4617-777-A DISP BOARD, COMPLETE (MADE IN JAPAN M11/M21)			

* 4-923-103-01 HOLDER, FL TUBE			
< CAPACITOR >			
C401	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C402	1-124-261-00	ELECT 10uF 20% 50V	
C403	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C404	1-124-261-00	ELECT 10uF 20% 50V	
< CONNECTOR >			
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
< FLUORESCENT INDICATOR TUBE >			
FLD401	1-519-611-11	INDICATOR TUBE, FLUORESCENT	

Ref. No.	Part No.	Description	Remark
< IC >			
IC401	8-752-817-41	IC CXP50112-097Q	
IC402	8-749-920-83	IC GP1U52XB	
< RESISTOR >			
R402	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R403	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R404	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R405	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R406	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R407	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R408	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R409	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R410	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R411	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R412	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R413	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R414	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R415	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R416	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R417	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R418	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R419	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R420	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R421	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R422	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R423	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R424	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R425	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R426	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R427	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R428	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R429	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R430	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R431	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R432	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R433	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R434	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R435	1-216-079-00	METAL CHIP 18K 5% 1/10W	
< SWITCH > (MADE IN JAPAN)			
S401	1-554-303-52	SWITCH, KEY BOARD (1)	
S402	1-554-303-52	SWITCH, KEY BOARD (2)	
S403	1-554-303-52	SWITCH, KEY BOARD (3)	
S404	1-554-303-52	SWITCH, KEY BOARD (4)	
S405	1-554-303-52	SWITCH, KEY BOARD (5)	

When indicating parts by reference number, please include the board name.

DISP

LOADING

MAIN

Ref. No.	Part No.	Description	Remark
S406	1-554-303-52	SWITCH, KEY BOARD (6)	
S407	1-554-303-52	SWITCH, KEY BOARD (7)	
S408	1-554-303-52	SWITCH, KEY BOARD (8)	
S409	1-554-303-52	SWITCH, KEY BOARD (9)	
S410	1-554-303-52	SWITCH, KEY BOARD (10)	
S411	1-554-303-52	SWITCH, KEY BOARD (11)	
S412	1-554-303-52	SWITCH, KEY BOARD (12)	
S413	1-554-303-52	SWITCH, KEY BOARD (>12)	
S414	1-554-303-52	SWITCH, KEY BOARD (MUSIC SCAN)	
S415	1-554-303-52	SWITCH, KEY BOARD (P. SEARCH)	
S416	1-554-303-52	SWITCH, KEY BOARD (CONTINUE)	
S417	1-554-303-52	SWITCH, KEY BOARD (SHUFFLE)	
S418	1-554-303-52	SWITCH, KEY BOARD (PROGRAM)	
S419	1-554-303-52	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S420	1-554-303-52	SWITCH, KEY BOARD (▶▶▶.▶▶▶)	
S421	1-554-303-52	SWITCH, KEY BOARD (◀◀◀.◀◀◀)	
S422	1-554-303-52	SWITCH, KEY BOARD (■)	
S423	1-554-303-52	SWITCH, KEY BOARD (▨)	
S424	1-554-303-52	SWITCH, KEY BOARD (▶)	
S425	1-554-303-52	SWITCH, KEY BOARD (OPEN/CLOSE ▲)	
S426	1-554-303-52	SWITCH, KEY BOARD (CHECK)	
S427	1-554-303-52	SWITCH, KEY BOARD (CLEAR)	
S428	1-554-303-52	SWITCH, KEY BOARD (TIME)	
S429	1-554-303-52	SWITCH, KEY BOARD (REPEAT)	
S430	1-554-303-52	SWITCH, KEY BOARD (FADER)	
< SWITCH > (MADE IN FRANCE)			
S401	1-554-303-81	SWITCH, KEY BOARD (1)	
S402	1-554-303-81	SWITCH, KEY BOARD (2)	
S403	1-554-303-81	SWITCH, KEY BOARD (3)	
S404	1-554-303-81	SWITCH, KEY BOARD (4)	
S405	1-554-303-81	SWITCH, KEY BOARD (5)	
S406	1-554-303-81	SWITCH, KEY BOARD (6)	
S407	1-554-303-81	SWITCH, KEY BOARD (7)	
S408	1-554-303-81	SWITCH, KEY BOARD (8)	
S409	1-554-303-81	SWITCH, KEY BOARD (9)	
S410	1-554-303-81	SWITCH, KEY BOARD (10)	
S411	1-554-303-81	SWITCH, KEY BOARD (11)	
S412	1-554-303-81	SWITCH, KEY BOARD (12)	
S413	1-554-303-81	SWITCH, KEY BOARD (>12)	
S414	1-554-303-81	SWITCH, KEY BOARD (MUSIC SCAN)	
S415	1-554-303-81	SWITCH, KEY BOARD (P. SEARCH)	
S416	1-554-303-81	SWITCH, KEY BOARD (CONTINUE)	
S417	1-554-303-81	SWITCH, KEY BOARD (SHUFFLE)	
S418	1-554-303-81	SWITCH, KEY BOARD (PROGRAM)	
S419	1-554-303-81	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S420	1-554-303-81	SWITCH, KEY BOARD (▶▶▶.▶▶▶)	

Ref. No.	Part No.	Description	Remark
S421	1-554-303-81	SWITCH, KEY BOARD (◀◀◀.◀◀◀)	
S422	1-554-303-81	SWITCH, KEY BOARD (■)	
S423	1-554-303-81	SWITCH, KEY BOARD (▨)	
S424	1-554-303-81	SWITCH, KEY BOARD (▶)	
S425	1-554-303-81	SWITCH, KEY BOARD (OPEN/CLOSE ▲)	
S426	1-554-303-81	SWITCH, KEY BOARD (CHECK)	
S427	1-554-303-81	SWITCH, KEY BOARD (CLEAR)	
S428	1-554-303-81	SWITCH, KEY BOARD (TIME)	
S429	1-554-303-81	SWITCH, KEY BOARD (REPEAT)	
S430	1-554-303-81	SWITCH, KEY BOARD (FADER)	
< CERAMIC >			
X401	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

* 1-632-202-11 LOADING BOARD			

< CONNECTOR >			
CN301	* 1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
< SWITCH >			
S191	1-572-086-11	SWITCH, LEAF (OUT SW)	
S192	1-572-086-11	SWITCH, LEAF (IN SW)	

* A-4617-692-A MAIN BOARD, COMPLETE (MADE IN FRANCE)			
* A-4617-706-A MAIN BOARD, COMPLETE			
(MADE IN JAPAN M11/M21:AEP, Australian)			
* A-4617-708-A MAIN BOARD, COMPLETE			
(MADE IN JAPAN M11:E, Saudi Arabia)			
* A-4617-771-A MAIN BOARD, COMPLETE			
(MADE IN JAPAN M12:AEP)			

4-902-345-01 HEAT SINK			
7-682-547-09 SCREW +8 3X6			
< CAPACITOR >			
C201	1-124-572-11	ELECT	100uF 20% 63V
C202	1-123-875-11	ELECT	10uF 20% 50V
C203	1-124-360-00	ELECT	1000uF 20% 16V
C204	1-124-898-11	ELECT	4700uF 20% 16V
C205	1-124-927-11	ELECT	4.7uF 20% 100V
C206	1-123-875-11	ELECT	10uF 20% 50V
C207	1-123-875-11	ELECT	10uF 20% 50V
C208	1-124-472-11	ELECT	470uF 20% 10V
C209	1-124-472-11	ELECT	470uF 20% 10V
C210	1-124-120-11	ELECT	220uF 20% 25V

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remark		
C211	1-124-472-11	ELECT	470uF	20%	10V
C212	1-124-472-11	ELECT	470uF	20%	10V
C221	1-164-159-11	CERAMIC	0.1uF		50V
C301	1-124-477-11	ELECT	47uF	20%	25V
C302	1-124-791-11	ELECT	1.0uF	20%	100V
C311	1-106-383-00	MYLAR	0.047uF	5%	200V
C312	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C313	1-161-494-00	CERAMIC	0.022uF		25V
C314	1-162-306-11	CERAMIC	0.01uF	20%	16V
C315	1-124-902-00	ELECT	0.47uF	20%	50V
C316	1-161-494-00	CERAMIC	0.022uF		25V
C317	1-164-159-11	CERAMIC	0.1uF		50V
C321	1-161-494-00	CERAMIC	0.022uF		25V
C331	1-162-208-31	CERAMIC	24PF	5%	50V
C332	1-106-220-00	MYLAR	0.1uF	5%	100V
C333	1-161-494-00	CERAMIC	0.022uF		25V
C335	1-162-205-31	CERAMIC	18PF	5%	50V
C341	1-161-494-00	CERAMIC	0.022uF		25V
C342	1-124-477-11	ELECT	47uF	20%	25V
C343	1-161-494-00	CERAMIC	0.022uF		25V
C344	1-161-494-00	CERAMIC	0.022uF		25V
C345	1-124-477-11	ELECT	47uF	20%	25V
C346	1-164-159-11	CERAMIC	0.1uF		50V
C347	1-124-477-11	ELECT	47uF	20%	25V
C348	1-164-159-11	CERAMIC	0.1uF		50V
C349	1-161-494-00	CERAMIC	0.022uF		25V
C350	1-124-477-11	ELECT	47uF	20%	25V
C351	1-161-494-00	CERAMIC	0.022uF		25V
C352	1-124-477-11	ELECT	47uF	20%	25V
C353	1-162-199-31	CERAMIC	10PF	5%	50V
C354	1-162-199-31	CERAMIC	10PF	5%	50V
C355	1-161-494-00	CERAMIC	0.022uF		25V
C356	1-124-477-11	ELECT	47uF	20%	25V
C357	1-124-472-11	ELECT	470uF	20%	10V
C361	1-162-285-31	CERAMIC	180PF	10%	50V
C362	1-162-285-31	CERAMIC	180PF	10%	50V
C363	1-162-283-31	CERAMIC	120PF	10%	50V
C364	1-162-283-31	CERAMIC	120PF	10%	50V
C365	1-162-283-31	CERAMIC	120PF	10%	50V
C366	1-162-283-31	CERAMIC	120PF	10%	50V
C367	1-161-494-00	CERAMIC	0.022uF		25V
C368	1-161-494-00	CERAMIC	0.022uF		25V
C371	1-106-359-00	MYLAR	4700PF	5%	200V
C372	1-106-359-00	MYLAR	4700PF	5%	200V
C373	1-106-345-00	MYLAR	0.0012uF	5%	100V
C374	1-106-345-00	MYLAR	0.0012uF	5%	100V
C375	1-161-494-00	CERAMIC	0.022uF		25V
C376	1-161-494-00	CERAMIC	0.022uF		25V

Ref. No.	Part No.	Description	Remark		
C377	1-124-477-11	ELECT	47uF	20%	25V
C378	1-124-477-11	ELECT	47uF	20%	25V
C379	1-106-349-00	MYLAR	0.0018uF	5%	100V
C380	1-106-349-00	MYLAR	0.0018uF	5%	100V
C392	1-164-159-11	CERAMIC	0.1uF		50V
C394	1-164-159-11	CERAMIC	0.1uF		50V

(MADE IN JAPAN M11/M21)

< CONNECTOR >

CN201	*1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P
CN301	*1-568-843-11	SOCKET, CONNECTOR 28P
CN302	*1-568-822-11	SOCKET, CONNECTOR 22P
CN381	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P (EXCEPT M12)

< DIODE >

D201	8-719-200-82	DIODE 11ES2
D202	8-719-109-96	DIODE RD6.8ES-B1
D203	8-719-200-82	DIODE 11ES2
D204	8-719-200-82	DIODE 11ES2
D205	8-719-200-82	DIODE 11ES2
D206	8-719-200-82	DIODE 11ES2
D207	8-719-114-49	DIODE RD7.5JS-B2
D208	8-719-109-89	DIODE RD5.6ES-B2
D209	8-719-107-94	DIODE 1SS202-1 (MADE IN JAPAN M12: Saudi Arabia/M12:AEP)
D209	8-719-987-63	DIODE 1N4148M (MADE IN JAPAN M11: Saudi Arabia/M12:AEP)
D341	8-719-210-21	DIODE 11EQS04-TA1B
D351	8-719-107-94	DIODE 1SS202-1 (MADE IN JAPAN EXCEPT M11: Saudi Arabia/M12:AEP)
D351	8-719-987-63	DIODE 1N4148M (MADE IN JAPAN M11: Saudi Arabia/M12:AEP)

< IC >

IC201	8-759-633-42	IC M5293L
IC202	8-759-630-21	IC M5290P-16
IC203	8-759-945-58	IC RC4558P
IC301	8-752-337-26	IC CXD2500AQ
IC302	8-752-337-09	IC CXD2554P
IC303	8-759-917-18	IC SN74HCU04AN
IC305	8-752-334-87	IC CXD2552Q
IC306	8-759-990-82	IC TL082CP
IC307	8-759-945-58	IC RC4558P

< JACK >

J381	1-569-442-11	JACK, PIN 2P (LINE OUT)
------	--------------	-------------------------

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< COIL >							
L331	1-408-403-00	INDUCTOR 3.3uH		R315	1-249-417-11	CARBON 1K 5% 1/4W	
< IC LINK >				R316	1-249-417-11	CARBON 1K 5% 1/4W	
PS201 Δ	1-532-685-00	LINK. IC		R317	1-249-420-11	CARBON 1.8K 5% 1/4W	
PS202 Δ	1-532-637-00	LINK. IC 1.0A		R318	1-249-441-11	CARBON 100K 5% 1/4W	
< TRANSISTOR >				R321	1-249-417-11	CARBON 1K 5% 1/4W	
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE		R322	1-249-417-11	CARBON 1K 5% 1/4W	
Q202	8-729-140-96	TRANSISTOR 2SD774-34		R323	1-249-417-11	CARBON 1K 5% 1/4W	
Q203	8-729-111-67	TRANSISTOR 2SB1094-L		R324	1-249-418-11	CARBON 1.2K 5% 1/4W	
Q204	8-729-900-65	TRANSISTOR DTA144ES		R331	1-249-409-11	CARBON 220 5% 1/4W	
Q205	8-729-900-89	TRANSISTOR DTC144ES		R332	1-247-887-00	CARBON 220K 5% 1/4W	
Q206	8-729-900-89	TRANSISTOR DTC144ES		R333	1-249-417-11	CARBON 1K 5% 1/4W	
Q207	8-729-230-45	TRANSISTOR 2SC2458TP-YGR		R334	1-249-409-11	CARBON 220 5% 1/4W	
Q208	8-729-111-67	TRANSISTOR 2SB1094-L (MADE IN JAPAN M12:AEP)		R341	1-249-393-11	CARBON 10 5% 1/4W	
Q208	8-729-821-73	TRANSISTOR 2SB1274SA-RS (MADE IN JAPAN EXCEPT M12:AEP)		R342	1-249-417-11	CARBON 1K 5% 1/4W	
Q209	8-729-281-52	TRANSISTOR 2SC1815-Y		R347	1-249-441-11	CARBON 100K 5% 1/4W	
Q343	8-729-900-65	TRANSISTOR DTA144ES		R348	1-249-429-11	CARBON 10K 5% 1/4W	
Q344	8-729-900-89	TRANSISTOR DTC144ES		R351	1-249-429-11	CARBON 10K 5% 1/4W	
Q371	8-729-141-30	TRANSISTOR 2SC3623A-LK		R352	1-249-429-11	CARBON 10K 5% 1/4W	
Q372	8-729-141-30	TRANSISTOR 2SC3623A-LK		R353	1-249-429-11	CARBON 10K 5% 1/4W	
Q373	8-729-141-30	TRANSISTOR 2SC3623A-LK		R354	1-249-429-11	CARBON 10K 5% 1/4W	
Q374	8-729-141-30	TRANSISTOR 2SC3623A-LK		R355	1-247-848-11	CARBON 5.1K 5% 1/4W	
< RESISTOR >				R356	1-249-405-11	CARBON 100 5% 1/4W	
R201	1-249-435-11	CARBON 33K 5% 1/4W		R361	1-247-838-00	CARBON 2K 5% 1/4W	
R202	1-249-438-11	CARBON 56K 5% 1/4W		R362	1-247-838-00	CARBON 2K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W		R363	1-247-838-00	CARBON 2K 5% 1/4W	
R204	1-249-425-11	CARBON 4.7K 5% 1/4W		R364	1-247-838-00	CARBON 2K 5% 1/4W	
R205	1-249-425-11	CARBON 4.7K 5% 1/4W		R365	1-249-432-11	CARBON 18K 5% 1/4W	
R206	1-249-417-11	CARBON 1K 5% 1/4W		R366	1-249-432-11	CARBON 18K 5% 1/4W	
R207	1-249-417-11	CARBON 1K 5% 1/4W		R367	1-249-432-11	CARBON 18K 5% 1/4W	
R208	1-249-423-11	CARBON 3.3K 5% 1/4W		R368	1-249-432-11	CARBON 18K 5% 1/4W	
R209	1-249-413-11	CARBON 470 5% 1/4W		R369	1-249-419-11	CARBON 1.5K 5% 1/4W	
R210	1-249-429-11	CARBON 10K 5% 1/4W		R370	1-249-419-11	CARBON 1.5K 5% 1/4W	
R211	1-249-410-11	CARBON 270 5% 1/4W		R371	1-249-419-11	CARBON 1.5K 5% 1/4W	
R214	1-249-417-11	CARBON 1K 5% 1/4W		R372	1-249-419-11	CARBON 1.5K 5% 1/4W	
R301	1-249-421-11	CARBON 2.2K 5% 1/4W		R373	1-247-887-00	CARBON 220K 5% 1/4W	
R302	1-249-421-11	CARBON 2.2K 5% 1/4W		R374	1-247-887-00	CARBON 220K 5% 1/4W	
R303	1-249-421-11	CARBON 2.2K 5% 1/4W		R375	1-249-409-11	CARBON 220 5% 1/4W	
R304	1-249-421-11	CARBON 2.2K 5% 1/4W		R376	1-249-409-11	CARBON 220 5% 1/4W	
R311	1-249-423-11	CARBON 3.3K 5% 1/4W		R377	1-249-409-11	CARBON 220 5% 1/4W	
R312	1-249-429-11	CARBON 10K 5% 1/4W		R378	1-249-409-11	CARBON 220 5% 1/4W	
R313	1-249-423-11	CARBON 3.3K 5% 1/4W		R379	1-249-425-11	CARBON 4.7K 5% 1/4W	
R314	1-249-429-11	CARBON 10K 5% 1/4W		R380	1-249-425-11	CARBON 4.7K 5% 1/4W	
				R381	1-249-425-11	CARBON 4.7K 5% 1/4W	
				R382	1-249-425-11	CARBON 4.7K 5% 1/4W	
				R383	1-249-414-11	CARBON 560 5% 1/4W	
				R384	1-249-414-11	CARBON 560 5% 1/4W	

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

MAIN

POWER SW

VOL

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S201 Δ	1-571-722-11	SWITCH, VOLTAGE SELECTION (E, Saudi Arabia)	
		< CRYSTAL >	
X351	1-579-161-11	VIBRATOR, CRYSTAL (45MHz)	

	* 1-637-818-11	POWER SW BOARD (MADE IN JAPAN)	
	* 1-637-818-21	POWER SW BOARD (MADE IN FRANCE)	

		< CONNECTOR >	
CN491	* 1-568-953-11	PIN, CONNECTOR 4P	
		< SWITCH >	
S491	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)	

	* 1-637-820-11	VOL BOARD (MADE IN JAPAN EXCEPT M12)	
	* 1-637-820-21	VOL BOARD (MADE IN FRANCE EXCEPT M12)	

		< CAPACITOR >	
C510	1-124-584-00	ELECT 100uF 20% 10V	
C511	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C512	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C520	1-124-584-00	ELECT 100uF 20% 10V	
C521	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
		< CONNECTOR >	
CN501	* 1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P	
		< IC >	
IC501	8-759-981-86	IC RC4556MA	
		< JACK >	
J501	1-568-519-41	JACK, LARGE TYPE (HEADPHONES)	
		< RESISTOR >	
R510	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R511	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R512	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R513	1-216-025-00	METAL CHIP 100 5% 1/10W	
R520	1-216-049-00	METAL CHIP 1K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R521	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R522	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R523	1-216-025-00	METAL CHIP 100 5% 1/10W	

< VARIABLE RESISTOR >

RV501	1-241-386-11	RES. VAR, CARBON 20K/20K (PHONE LEVEL)	
-------	--------------	--	--

MISCELLANEOUS

11 Δ	1-574-127-31	CORD, POWER (MADE IN FRANCE M11/M12/M21:AEP)	
11 Δ	1-574-358-31	CORD, POWER (WITH CONNECTOR) (M11/M21:Australian)	
11 Δ	1-574-390-31	CORD, POWER (M12/M41:UK)	
11 Δ	1-575-651-21	CORD, POWER (MADE IN JAPAN M11/M12/M21:AEP/M11:Saudi Arabia)	
11 Δ	1-575-653-21	CORD, POWER (M11/M21:E)	
12 Δ	1-569-007-11	ADAPTOR, CONVERSION 2P (M11/M21:E)	
12 Δ	1-569-008-11	ADAPTOR, CONVERSION 2P (M11:Saudi Arabia)	
19	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
25 *	1-637-818-11	POWER SW BOARD (MADE IN JAPAN)	
25 *	1-637-818-21	POWER SW BOARD (MADE IN FRANCE)	
26 *	1-637-820-11	VOL BOARD (MADE IN FRANCE EXCEPT M12)	
26 *	1-637-820-21	VOL BOARD (MADE IN LAPAN EXCEPT M12)	
311 *	1-452-538-11	MAGNET	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
357 Δ	8-848-144-11	DEVICE, OPTICAL KSS-240A	
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
FLD401	1-519-611-11	INDICATOR TUBE, FLUORESCENT	
T901 Δ	1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN M11/M21:AEP, Australian/M12:AEP)	
T901 Δ	1-449-923-11	TRANSFORMER, POWER (MADE IN JAPAN M11:E, Saudi Arabia/M21:E)	
T901 Δ	1-449-925-11	TRANSFORMER, POWER (MADE IN FRANCE AEP, UK)	

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark
		ACCESSORY & PACKING MATERIAL	
	1-465-635-11	REMOTE, COMMANDER RM-D295 (MADE IN JAPAN M12)	
	1-465-635-21	REMOTE, COMMANDER RM-D295 (MADE IN FRANCE M12)	
	1-558-271-11	CORD, CONNECTION	
	3-752-961-11	MANUAL, INSTRUCTION (MADE IN JAPAN M21)	
	3-752-961-41	MANUAL, INSTRUCTION (MADE IN JAPAN M21:AEP)	
	3-752-961-51	MANUAL, INSTRUCTION (E, F, SP, P) (MADE IN FRANCE M21:AEP/M41:UK)	
	3-752-961-61	MANUAL, INSTRUCTION (G, D, SW, I) (MADE IN FRANCE M21:AEP)	
	3-752-962-11	MANUAL, INSTRUCTION (MADE IN JAPAN M11)	
	3-752-962-41	MANUAL, INSTRUCTION (G, D, SW, I) (MADE IN JAPAN M11:AEP)	
	3-752-962-51	MANUAL, INSTRUCTION (E, F, SP, P) (MADE IN FRANCE M11:AEP)	
	3-752-962-61	MANUAL, INSTRUCTION (G, D, SW, I) (MADE IN FRANCE M11:AEP)	
	* 3-795-629-15	INSTRUCTION (MADE IN JAPAN M11/M12/ M21:AEP)	
	* 3-795-629-45	INSTRUCTION (MADE IN FRANCE M12:AEP)	
	* 4-922-998-03	CUSHION (MADE IN JAPAN M11/M12/M21)	
	* 4-927-355-02	CUSHION (MADE IN FRANCE:AEP, UK)	
	* 4-941-548-01	LABEL, CLASS 1	
	* 4-942-898-21	INDIVIDUAL CARTON (MADE IN FRANCE M11:AEP)	
	* 4-942-898-31	INDIVIDUAL CARTON (MADE IN FRANCE M12:AEP, UK)	
	* 4-944-042-01	INDIVIDUAL CARTON (MADE IN JAPAN M11)	
	* 4-944-042-11	INDIVIDUAL CARTON (MADE IN JAPAN M12)	
	* 4-944-042-21	INDIVIDUAL CARTON (MADE IN JAPAN M21)	
	* 4-942-898-11	INDIVIDUAL CARTON (MADE IN FRANCE M12)	

HARDWARE LIST

#1	7-682-548-09	SCREW +BVTT 3X8 (S)
#2	7-682-547-04	SCREW +BVTT 3X6 (S)
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#4	7-682-547-09	SCREW +B 3X6
#5	7-621-775-10	SCREW +B 2.6X4
#6	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
#7	7-621-255-15	SCREW +P 2X3

D: DUTCH
E: ENGLISH
F: FRENCH
G: GERMAN
I: ITALIAN
P: PORTUGUESE
SP: SPANISH
SW: SWEDISH

SS-A105

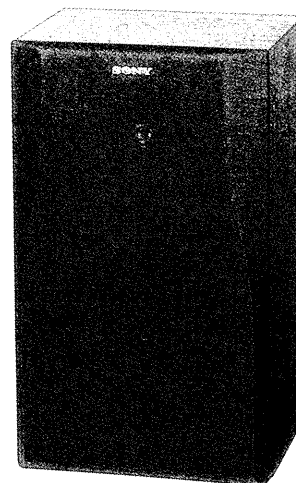
SERVICE MANUAL

AEP Model
UK Model

SPECIFICATIONS

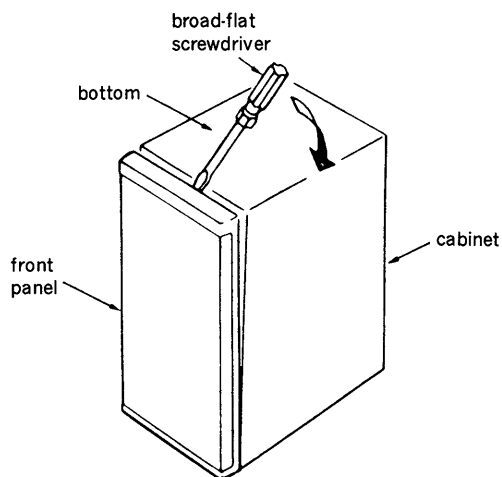
Speaker system	2-way
Speaker units	Woofer : 16cm cone type Tweeter: 6cm cone type
Power handling capacity	Maximum input power 60W
Sensitivity	88dB/W/m
Frequency range	55-20,000 Hz
Rated impedance	6 ohms
Dimensions	Approx. 230x381x195mm(w/h/d)
Weight	Approx. 3.7 kg

Design and specifications subject to change without notice.



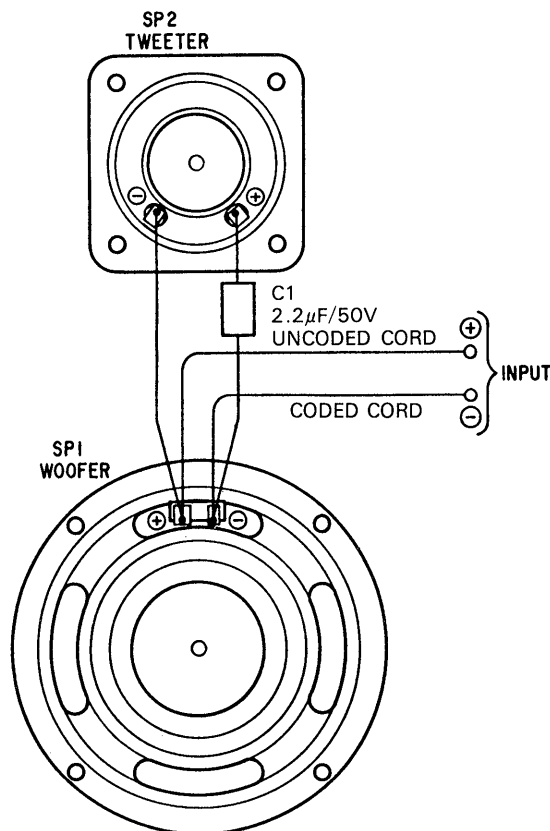
This set is the speaker system in LBT-D105.

1. FRONT PANEL REMOVAL



Note : Be careful not to scratch the cabinet.

2. WIRING DIAGRAM

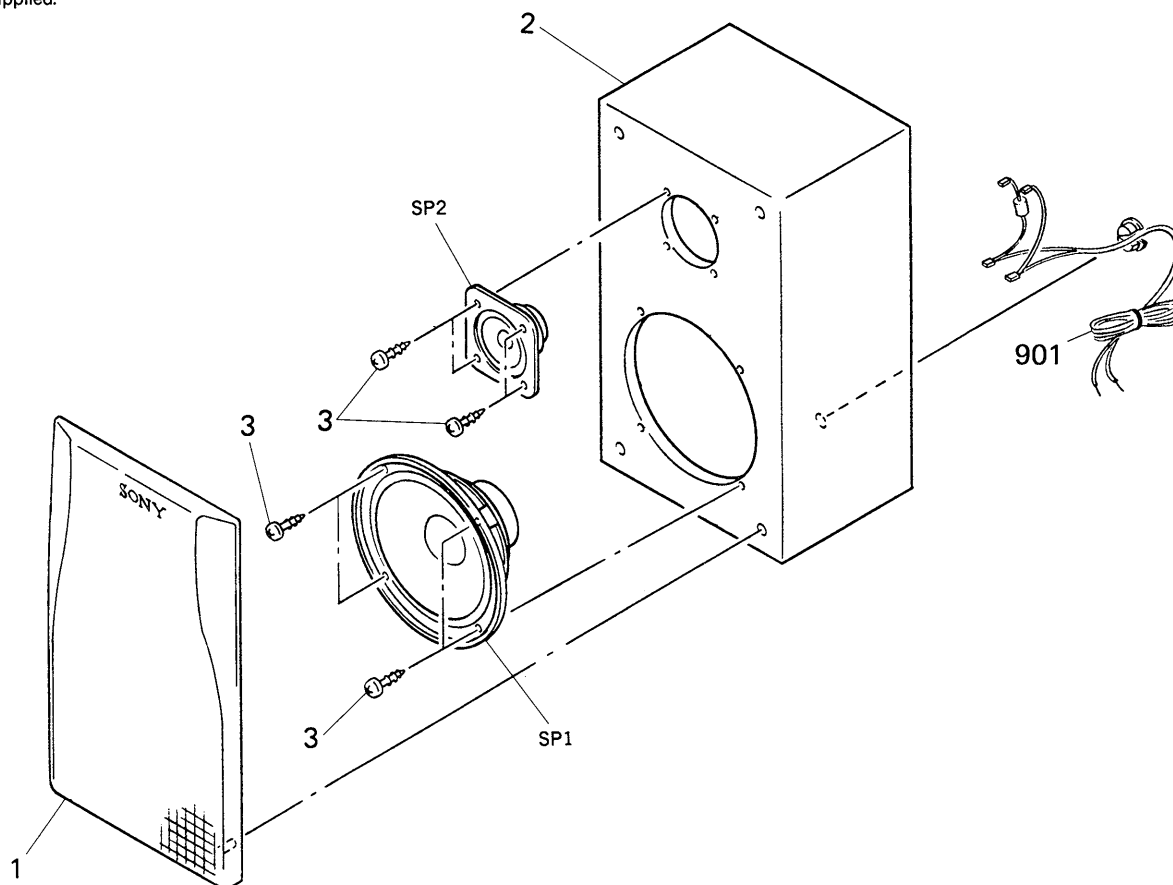


SPEAKER SYSTEM
SONY®

3. EXPLODED VIEW AND PARTS LIST

Note :

- The mechanical parts with no reference number in the exploded views are not supplied.



<u>No.</u>	<u>Part No.</u>	<u>Description</u>
1	T-8150-388-A	PANEL ASSY, FRONT
2	T-8151-305-1	SPEAKER BOX
3	T-8150-573-1	TAPPING SCREW +P 4X15

ELECTRICAL PARTS

<u>No.</u>	<u>Part No.</u>	<u>Description</u>
901	T-8150-406-A	WIRE KIT ASSY
SP1	T-8110-420-1	WOOFER
SP2	1-544-046-11	TWEETER

ACCESSORY & PACKING MATERIAL

T-8151-345-1 MANUAL, INSTRUCTION